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Population Pressure and Food Production Potentialities†

By RALEIGH BARLOWE*

SINCE his expulsion from the Garden of Eden man has always evidenced concern over the sufficiency of his food supply and its relation to his prospects for survival. He has shown this concern in underpopulated and underdeveloped areas as well as in densely populated places. It has provided him with a common cause for war and dissension. In many cultures it has even prompted special population control practices (marriage controls, birth control, infanticide, senicide, etc.)[1]

Seldom, if ever, in the history of man has the average citizen of any country been as well fed as the American people have been in recent years. Even so, America today is experiencing a sudden revival of interest in this fundamental relationship between population pressure and food production potentialities. The basis for this popular concern over the food supply can be traced to public awareness of two problems—hunger in the rest of the world, and the rapid and often exploitative use that has been made of certain critical natural resources. Popular interest in this subject has been further stirred by the appearance of a rash of controversial scare literature—books and articles which in many cases dramatize the situation with predictions of over-population, starvation, and other gloomy forebodings.

Part of the thesis advanced by the writers of this neo-Malthusian school has a sound basis in fact; part of it is subject to question. A more objective analysis of the situation calls for careful and balanced consideration of the data relating both to food production potentialities and to population pressure. In this article an effort is made to analyze briefly and if possible to reconcile the data concerning these two problems.

From Malthus to Neo-Malthusianism

No special effort was made to express the relationship that exists between population pressure and food supply until

† Journal Article No. 1052 (n.s.) of the Michigan Agricultural Experiment Station, East Lansing, Michigan.

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[1] Cf., Warren S. Thompson, *Population Problems* (New York: McGraw-Hill, 1942), Chapter 1.

1798—the year in which Thomas Malthus introduced his now famous doctrine of population growth. At that time there seemed to be a clear-cut case for the Malthusian thesis that "population invariably increases where the means of subsistence increase . . . unless prevented by some very powerful and objective checks."

Throughout the Middle Ages the population of Europe was held pretty much in balance. Fertility rates were high; but so were mortality rates. Famines, of which almost 600 were reported in Europe in the first eighteen centuries after Christ, acted as one of the positive checks against population increase. Disease and pestilence took their toll. Plagues such as the Black Death of the 14th century wiped out two-thirds to three-fourths of some populations and claimed around a fourth of all the lives in Europe. Intermittent warfare provided another important positive check. The Thirty Years' War, for example, reduced the population of Bohemia and the German States to between a third and a half of their former numbers.

Between 1650 and 1800 this population balance was upset. Agricultural production and trade activity increased in Europe and the total population almost doubled. The effect of this increase in population pressure, together with the reports of rapid population increase in the American settlements, led Malthus to take a very dim view of man's ability to raise himself above an almost constant concern over his immediate food supply.

The century and a half that has elapsed since Malthus first published his views has seen his population theory demonstrated time after time in many parts of the world. But although logical in theory, his doctrine has not always stood up in practice—at least not in the Western World where technological advances and improvements in the state of the arts have brought tremendous increases in food production at the very time when fertility and mortality rates have declined.

This tendency for food production to keep up in its race with population growth is very well illustrated in the case of the United States. Before World War II agricultural productivity in this country had so out-distanced population growth "that the age-old pressure of population upon the food supply changed skins and became the pressure of the food supply upon the population."[2] In the 70 years between 1870 and 1940 the population of the United States increased by 341 percent, while total agricultural productivity increased 378 percent and average productivity per farm worker increased 282 percent.[3] Since 1940 this trend has continued—total population has increased by approximately an eighth while a smaller farm labor force has succeeded in increasing total agricultural production by more than a third.

Despite their bounteous food potential, however, may Americans have been genuinely perturbed by the implications of the Malthusian doctrine. This concern, always smoldering in some quarters, seems to erupt periodically in almost epidemic proportions. In many respects it has become a standard post-war phenomenon. Interest in this problem at the close of the Napoleonic Wars prompted the English economists to formulate their secular law of diminishing returns. After the Spanish-American War concern over rapid population growth, the disappearing frontier, and exploitative resource utilization practices helped to inspire the Conservation Movement. Again after World War I there was a revival of interest in this subject—a revival that

[2] John M. Brewster, "Farm Technological Advance and Population Growth," *Journal of Farm Economics*, August 1945, p. 509.

[3] Cf., *ibid.*, p. 513.

stimulated a flow of literature dealing primarily with the subject of population growth under such suggestive titles as *Mankind at the Crossroads* and *Standing Room Only?*[4]

The current widespread revival of interest in this subject stems largely from the appearance and popular distribution of a few books that take an extremely pessimistic view of the situation.[5] The authors of these books, sometimes described as neo-Malthusians, question or deny the world's ability to feed and supply an expanding population. One of the more provocative of these writers goes so far as to suggest that the United States and the world are already overpopulated, that man has usurped his rightful place in the ecological balance of nature, and that definite steps should be taken to prevent population increases and eventually to reduce the world's population to a lower level. The assertions of this neo-Malthusian doctrine have been challenged by a number of other writers who assert that "the earth can feed her people."[6]

Current Population Trends

Between 1940 and the middle of 1949 the population of the United States increased by an estimated 16.5 million persons or at a rate of slightly more than 12 persons per thousand per year. Estimates also show that the population of the world has been increasing during recent years at a rate of approximately one percent per year.[7] This is almost double the average annual world rate of increase that has prevailed over the last three centuries, during which period the world's population has increased from 545 million to 2.4 billion persons.[8]

Continuation of this rate of increase would clearly justify an attitude of alarm. With an increase of only one percent per year it is calculated that an original population of 100 persons at the dawn of the Christian Era would have expanded to approximately 11 times the world's present population by 1950. Similarly, the projection of this rate into the future would give the United States a population of 245 million and the world a population of almost 4 billion in another 50 years.

Fortunately for mankind there is little likelihood that the present rate of population growth will continue for long. During the 1930's the population of the United States increased at the rate of 7 persons per thousand per year. This rate jumped to a high level during the war period but has already started to decline. The Census Bureau now estimates that population will continue to increase at an average rate of between 6 and 7 persons per thousand per year during the 1950's.[9] This will raise the nation's total population from an estimated 148 million persons in 1949 to approximately 160 million in 1960.

Demographers predict that the population of this country will probably level off in another 25 to 30 years at a peak of around 175 to 180 million persons. These estimates are based on careful analysis of

[4] Edward M. East, *Mankind at the Crossroads* (New York: Charles Scribner's Sons, 1923); Edward A. Ross, *Standing Room Only?* (New York: Century Company, 1928).

[5] Cf., particularly Willian Vogt, *Road to Survival* (New York: William Sloane Associates, 1948); Fairfield Osborn, *Our Plundered Planet* (Boston: Little Brown and Co., 1948); and Frank A Pearson and Floyd A. Harper, *The World's Hunger* (Ithaca: Cornell University Press, 1945).

[6] Cf., particularly Robert M. Salter, "World Soil and Fertilizer Resources in Relation to Food Needs," *Science*, May 23, 1947, pp. 533-538; Charles E. Kellogg, "Food Production Potentialities and Problems," *Journal of Farm Economics*, February 1949, pp. 251-262; and Charles E. Kellogg, "The Earth Can Feed Her People," *Farm Policy Forum*, January 1949, pp. 1-5.

[7] Cf., Conrad and Irene B. Taeuber, "World Population Trends," *Journal of Farm Economics*, February 1949, p. 246.

[8] Cf., *ibid.*, p. 241; and Frank W. Notestein, "Population—The Long View," in *Food For the World* (Chicago: University of Chicago Press, 1945), p. 38.

[9] Cf., U. S. Bureau of the Census, "Forecasts of Population and School Enrollment in the United States: 1948 to 1960," *Current Population Reports*, Series P-25, no. 18, February 14, 1949.

the age group profile of the present population and interpolation of known immigration, fertility and mortality rate trend data into the future.

This prediction of population trends in the United States is not applicable to the world scene. A wide divergence in fertility and mortality rates and in cultural attitudes toward family size complicates the problem of forecasting world population trends. One of the better approaches to this problem involves the classification of the various nations on the basis of their population growth prospects into three groups: (1) the incipient decline group, (2) the transitional growth group, and (3) the high growth potential group.[10]

The incipient decline group accounts for approximately a fifth of the world's population and includes the countries of northwestern and central Europe, the United States, Canada, Australia, New Zealand, and the white population of South Africa. All of these countries have been profoundly influenced by industrial and technological change and boast relatively high levels of living. Over the last two centuries they have experienced rapid increases in population while mortality rates have been steadily reduced. More recently fertility rates have also declined to the point at which a stabilized population level has either been reached or appears to be within sight. In a few nations birth rates have even fallen below mortality rates so as to bring a net decline in population numbers. This condition has stimulated interest in ways and means of increasing the birth rate.

The transitional growth group accounts for another fifth of the world's population and includes the Soviet Union, Japan, eastern and southern Europe and parts of Latin America. The industrialization and urbanization movement had a later start in these areas than in the nations of the incipient group. As a result the demographic process of shifting from high fertility and high mortality rates to low fertility and low mortality rates is only partially completed. Lowering of the mortality rates has resulted in rapid rates of population increase. This increase is being followed by a gradual reduction in fertility rates and will eventually result in a leveling off of the total population.

The countries of this group are on their way to becoming incipient population decline areas. However, their populations will continue to increase for many years after the populations of Western European nations have been stabilized. The Soviet Union provides a fitting example of the trends experienced in these countries. There, the total population increased from 133 million persons in 1922 to 170 million in 1939 and 193 million in 1947. By 1970 it is estimated that the U.S.S.R. will have a population of 251 million, by 2000 a population of approximately 300 million.

The real, long-run problem of population increase arises in the case of the high growth potential group of nations. This group accounts for three-fifths of the world's people and embraces all of Asia except Siberia and Japan, practically all of Africa, the Caribbean area, and much of Latin America.

In these areas mortality and fertility rates both remain high, and the Malthusian devil remains completely unchained. Epidemic control and public health measures generally result in increasing the pressure exerted by the expanding population against an already inadequate food supply. Except in the cities, where there has been some reduction in fertility rates, the population quickly responds to every increase in food production. Generally speaking, mal-

[10] Cf., Notestein, *loc. cit.*, pp. 42-57.

nutrition is common and operates with famine and disease to keep the total population in check. In these areas the average standard of life is low and the relation between man and his environment is such that man is often more concerned with the physical act of survival than with long-range policies that might raise levels of living.

The prospects for population increase on the world scene differ with each of these groups of nations. With the incipient decline group, population is still increasing but the stabilization point may be reached in the next two or three decades. Population is increasing even more rapidly in the transitional growth areas but a stabilization point is in sight, possibly around the turn of the century. In these two areas it is not improbable that a balance can be achieved between births and deaths that will permit the development and maintenance of relatively favorable living and cultural standards.

For the 60 percent of the world's people who live in high growth potential areas the prospects for the future are not so bright. Their numbers are steadily increasing. Thus far they have hardly begun to experience the shift from high mortality and fertility rates to low mortality and fertility rates that will be necessary if they are to use their present resource base in raising their average levels of living.

How and when this demographic process will take place is unknown. Should no effort be made to increase the food supply in these areas a Malthusian type of population balance could be secured in a relatively short period. This approach, however, seems improbable. Attempts will be made to further extend the advantages of modern medical science to these areas; programs will be instituted to encourage the industrial and technological development of local resources. Without special population control policies these developments will almost inevitably lead to tremendous increases in native population numbers long before a downward adjustment in fertility rates becomes culturally acceptable. Barring the use of population control policies or of some new technological advances that will permit a vast increase in the food supply, it is questionable whether the peoples of these countries will ever be able to raise themselves much above a subsistence standard of life.

Crop Land Requirements

The crop land requirements of the world are affected by three factors: the use and productivity of the land, the size of the population, and the nutritional standards considered acceptable. The question of acceptable nutritional and dietary standards varies considerably from area to area.

From the standpoint of average quantity of food consumed there are no great differences between peoples or nations. Pearson and Harper report a world average per capita consumption of 558 pounds of dry food matter a year with the difference between continents ranging from 543 pounds per capita per year in Asia to 587 pounds in Europe.[11] Much greater differences exist so far as quality of diet is concerned. In the United States and western Europe, for example, considerably more emphasis is placed on the consumption of meat, dairy products, fruits and vegetables than is the case in many parts of the world. The people of the United States are often vitamin conscious and usually enjoy diets that are more varied and often better balanced from a nutritional point of view than is the case in those areas where major reliance is placed on the use of cereals and pulses with very limited use of animal products.

[11] Pearson and Harper, *op. cit.*, p. 12.

Calorie intake provides a popular measure for comparing the sufficiency of various dietary standards. Conditions of age, sex and levels of activity affect man's need for calories, but on the average a diet containing less than 2250 calories a day is considered a low-calorie diet. Yet the studies of the Food and Agriculture Organization of the United Nations show that the food supplies available at the retail level (not actual intake) in areas containing over half of the world's prewar population were not sufficient to provide an average diet containing 2250 calories a day.[12] Approximately 90 percent of the peoples in these areas live under conditions that foster a mortality rate of over 30 deaths per thousand persons each year. This is almost three times the 1947 mortality rate in this country and helps to explain why the average span of life is less than half as long in countries such as India as it is in the United States and Great Britain. Less than a third of the world's people had diets before the war that provided them with an average of more than 2750 calories a day, and only about an eighth of the total population enjoyed high-calorie diets containing an average of 3,000 or more calories a day.

In 1946 FAO set up some world nutritional targets to be used as guides in directing world food production between then and 1960. For those countries in which food supplies were considered insufficient in quantity as well as inadequate in quality the establishment of these targets involved the raising of production goals to permit an average daily intake of around 2600 calories per person. For the countries with calorie supplies above this level recommendations were made for quality improvements in average diets. Assuming a 25 percent increase in world population above prewar numbers, it was then argued that world food needs in 1960 would call for the following percentage increases in food production over prewar levels:[13]

Commodity	*Percent*
Cereals	21
Roots and tubers	27
Sugar	12
Fats and oils	34
Pulses, nuts, cocoa	80
Fruits and vegetables	163
Meats, fish, eggs	46
Milk	100

The achievement of these production goals can be secured by bringing new lands into production, increasing the intensity of production, and shifts in crop and pasture land use. FAO made no estimates of the world cropland area required for the attainment of these goals.

The FAO recommendations for production changes in the United States in many respects parallel those made by Charles F. Brannan, then Assistant Secretary of Agriculture, in his remarks before the Senate and House Subcommittees on "Long-Range Agricultural Policy," in October 1947.[14] Mr. Brannan at that time set up a human consumption potential for the United States that envisaged an average consumption of food per person equal to that consumed in 1941 by the 40 percent of the population who had annual incomes of $2,000 or more per family or unattached worker. Even with no allowance for population increase, Mr. Brannan's testimony shows that attainment of this production goal (including the maintenance of export surpluses of certain farm products) would require the use of essentially all the available cropland in the nation that can be

[12] Cf., Food and Agriculture Organization, *World Food Survey* (Washington: Food and Agriculture Organization of the United Nations, July 1946), pp. 7, 37-49.

[13] *Ibid.*, pp. 14-18.

[14] Cf., *Long-Range Agricultural Policy*, Hearings before Subcommittees of the Senate Committee on Agriculture and Forestry and the House Committee on Agriculture on S. Res. 147 and H. Res. 298, 80th Cong., 1st Session, pp. 12 and 24.

utilized under a conservational system of farming.

The production data presented by Mr. Brannan assume some increases in crop yields. More recently the Bureau of Agricultural Economics has estimated that under favorable economic conditions total agricultural production might increase by as much as 25 percent by 1975.[15] The prospect for this substantial increase in agricultural production places this country in a favorable position. But, even so, this example in a nation which has so recently stood as one of the high producing islands in a hungry world suggests the problem that much of the rest of the world will face in finding sufficient crop land to provide the food supplies recommended by FAO.

The interrelation between dietary and nutritional standards and crop land requirements, however, is relative. It takes more crop or range land per capita to support life in semiarid regions than in warm humid areas. Similarly, those peoples who are content with diets composed largely of cereals and crops grown under conditions of intensive culture may need considerably less crop land per capita than those who use large amounts of livestock products. Pearson and Harper point out that the North American continent could support more than three times its present population if the people accepted the average Asiatic standard and more than twice its present population if the average European dietary standard were accepted.[16]

The United States today has around 2.7 acres of cropland and 7.1 acres of pasture and range land for each of its inhabitants. This is a large area compared with the average of 0.2 acres of cropland for each person in Japan or the average of around 0.5 acres per person in many other Far Eastern countries. Yet because of the nature of the diet preferred in this country, population increase might have a greater proportional effect in lowering dietary standards here than in other areas. In the last half century the area of cropland per person in the United States has dropped from 4.2 to 2.7 acres, a drop of more than a third. A number of factors, including the substitution of mechanical power for horse power, technological improvements that have brought higher crop yields, and the nation's shifting position in the international market for farm products, have kept this reduction from meaning lower per capita food supplies. With population still increasing the maintenance of this level of supplies in the future will necessitate the bringing of new lands into production and the more intensive use of the lands now under cultivation.

Area Available for Food Production

The earth has a total surface area of approximately 197 million square miles. Only a little over a fourth of this area, 55 million square miles or 35.7 billion acres, is land surface area. Varying estimates have been made of the proportion of this area that is usable for food production.

Pearson and Harper assert that only 43 percent of the total land area receives adequate rainfall for crop use, that only 34 percent receives both an adequate and a reliable supply of rainfall, that only 32 per cent has both of these in addition to suitable temperature, and that only 21 percent enjoys suitable topography for crop use along with favorable rainfall and temperature. When consideration is given to their estimate that only 46 percent of the earth's soil can be classified as "good," it is concluded that only 7 percent of the world's land area is

[15] Cf., *Long-Range Agricultural Policy* (the so-called Hope Committee Report), report for House Committee on Agriculture, 80th Cong., 2nd Session, March 10, 1948, p. 10.

[16] Pearson and Harper, *op. cit.*, p. 69.

adapted to agricultural production.[17] By their estimates land adapted to agricultural production represents 3 percent of the land area of Africa, 5 percent of South America, 6 percent of Asia, 10 percent of North America and 37 percent of Europe.[18]

O. E. Baker takes a somewhat more optimistic view of the arable land situation.[19] He gages his estimates to the ability of the land to produce wheat. His conclusions show that 21 percent of the world's land is too cold, 40 percent too dry, 6 percent too rough, 2 percent too poor, and 21 percent too wet for wheat culture. Less than half of the 10 percent of the land that he considers suitable for wheat culture is actually used for crops. In his approach he recognizes that much of the land area considered too wet for wheat is suitable for rice and other crops. Also many of the areas held unsuitable for wheat because of climatic, topographic or fertility conditions may have value as pasture and range land.

Altogether, Dr. Baker has estimated that about 4.4 billion acres can be used for growing wheat, rice and other cereals. Pearson and Harper limit the potential area available for crop use to 2.6 billion acres, of which 1.5 billion acres—4.3 percent of the world's land—is now used for food crops. These estimates can be compared with Carl Alsberg's estimate that 10 million square miles or 6.4 billion acres could be used for crops if necessary and that a like area is available for grazing and tree crop purposes.[20] In another very optimistic estimate, the German geographer Penck asserted a quarter of a century ago that the world's land resources with the application of the then existing agricultural production technology could produce enough food to support a population of 13.5 billion.[21]

It is estimated that somewhere between 7 and 10 percent of the earth's land is now under cultivation. Also it is recognized that many opportunities exist for new land settlements, for the bringing of new areas under cultivation. Practically all of the world's more fertile soils are already in production.[22] But soil scientists, notably Kellogg and Salter, indicate that a great expansion in crop cultivation and food production is possible on the podzol soils of the North Temperate Zone and on the red soils of the tropics and subtropics. These soils occupy about 28 percent of the earth's surface, of which approximately one percent is under cultivation.

Stoniness and unfavorable topography make a large proportion of these soils unsuitable for agriculture. But it is estimated that 1.3 billion acres could be used for food production. Of this total, 100 million acres of red tropical and alluvial soils are available on the great islands of Madagascar, Sumatra, Borneo and New Guinea. Another 900 million acres in Africa and South America, about a fifth of the unused red tropical soils on these two continents, could be farmed.[23] Still another 300 million acres could be se-

[17] Cf., *ibid.*, pp. 27-28, 42, and 48. The writer finds it difficult to follow the logic of this final conclusion.

[18] *Ibid.*, p. 50.

[19] Cf., O. E. Baker, *The Population Prospect in Relation to the World's Agricultural Resources* (Univ. of Maryland, 1947), quoted in FAO, *The State of Food and Agriculture*, 1948, (Washington: Food and Agriculture Organization of the United Nations, 1948), p. 27.

[20] Cf., Carl Alsberg, "The Food Supply in the Migration Process," in *Limits of Land Settlement*, p. 43 (New York: Council on Foreign Relations, 1937); also R. P. Christianson, Discussion comments, *Journal of Farm Economics*, February 1947, pp. 266-267.

[21] Cf., A. Penck, "Das Hauptproblem der physischen Anthropogeographie," Zeitschrift für Geopolitik, I, Heft 5, May, 1925, pp. 330-348 (referred to by Karl Brandt in *Food for the World*, p. 136).

[22] Cf., Curtis F. Marbut, "The Rise, Decline, and Revival of Malthusianism in Relation to Geography and Character of Soil," *Annals of the Association of American Geographers*, March 1, 1925 (reprinted in *C. F. Marbut Memorial*, Columbia, Mo.: Soil Science Society of America, 1942), pp. 116-117; Salter, *loc. cit.*; Kellogg, *loc. cit.*; and Kellogg, "The Soils That Men Live By," a lecture for Graduate School, U. S. Dept. of Agriculture, Nov. 15, 1948 (mimeographed).

[23] There is considerable lack of agreement among writers

(Foo n... 23 continued on page 235)

cured by bringing about 10 percent of the unused podzol soils found in the northern hemisphere into production.

In discussing the problem of potential food production, Salter shows that with the use of improved tillage practices the present cropland area of the world can produce practically all the cereals, roots and tubers, sugar, and fats and oils that the world will need under the FAO estimates for 1960. It will fall far short, however, in supplying enough milk, meat, fruits and vegetables, and pulses and nuts. By bringing 1.3 billion more acres into production and by assuming production levels on the tropical soils comparable to those that prevail in the Philippines and production levels on the 300 million acres of podzol soils comparable with those found in Finland, Salter concludes that new production could provide more food than will probably be needed for some decades to come.

With the new areas in production the world could produce twice the volume of cereals, two and a half times the roots and tubers, almost six times the sugar, three and a half times the fats and oils, and more than adequate supplies of fruits and vegetables, meat, and milk to meet the 1960 food goals. Only the supply of pulses and nuts would remain below the FAO food targets.[24]

The opportunity for bringing new lands such as these into production appears bright. Actually, however, the immediate prospects for this development are not too promising. Generally speaking, the opportunities for new land settlements in the rest of the world are viewed very much as they are here in the United States. Here, an estimated 75 to 100 million acres of unimproved land could be brought under cultivation through clearing, drainage, irrigation or other improvements.[25] But it is generally agreed that the most accessible, easiest to improve, and in many respects the "best" farm lands have long since been brought into use. Many of the lands still remaining undeveloped can be "produced" only at considerable cost—costs that very often cannot be justified on an individual investment basis with farm prices at their present level.

The same line of reasoning is applicable on the world scene. The most fertile and most productive soils for the most part are already in use, and few new farms will be developed without economic incentives. Famines may occur in India and China and food may be a scarce and valuable commodity in many countries. Yet so long as international barriers keep surplus populations from migrating to areas of prospective settlement, the effect of their demand for food on world prices may have far too small an influence to encourage private or even public capital to undertake the development of new agricultural areas.

This does not mean that these new areas will not be brought into use. Many

(*Footnote 23 continued from page 234*)

concerning the agricultural potentialities of the tropics. In 1925, A. Fischer ("Zur Frage der Tragfähigkeit des Lebensraumes," *Zeitschrift für Geopolitik*, II, 1925, pp. 762-779, 842-858) estimated that Africa had a human carrying capacity of 1,650 million persons—more than 12 times its then existing population. Vogt and Osborn, on the other hand, present a very pessimistic view of the future food production capacity of Africa and other tropical areas. Soil scientists such as Robert L. Pendleton ("Potentialities of the Tropics," a lecture for the Graduate School, U. S. Department of Agriculture, April 18, 1949) and C. F. Marbut have cautioned against overestimates of the suitability of many tropical soils for extended commercial food production use. Kellogg and Salter follow a middle path in assuming that a billion acres of currently unused tropical soils are physically suitable for crop production. Significantly enough, however, their estimate assumes economic and social conditions favorable to the bringing of new lands into production. This raises an important point. The lack of favorable economic, social and institutional factors can and often does present just as formidable a barrier to the development of new areas as the lack of a rich natural resource base. This is particularly true in many tropical areas where poverty, disease and illiteracy are common phenomena.

[24] Cf., Salter, *loc. cit.*, Table 3, p. 537.

[25] Cf., L. A. Ruess, H. H. Wooten, and F. J. Marschner, *Inventory of Major Land Uses in the United States*, U. S. Dept. of Agriculture, Misc. Pub. No. 663, 1948, pp. 54-6.

of them will be developed as time goes by and as an economic demand arises for their use. Some of them will probably turn out to be very productive, while disappointing results are likely to accompany the development of other areas. In almost every case, however, the "production" of new farm land will be associated with costs—economic costs that often will be high because of the need for land clearing operations, drainage, terracing, stone removal, irrigation, building construction, sanitation and health installations, transport and communication developments, and other improvements or costs that will result from necessary social and institutional adjustments.[26] The necessity of encountering these costs will make the development of some prospective areas of settlement seem uneconomic under present world prices. With a higher price level many lands now considered submarginal both here and in other parts of the world may be used for food production.

Impact of Technological Change

Even with a minimum of technological advance the present land resources of the world are probably sufficient to supply all the food that will be needed for many years. Properly used, the present resource base could provide well balanced high-calorie diets for all the present population of the world and even for a considerable increase in population. Without either a check on population increase or an unlimited flow of new technological improvements, however, the point must eventually be reached at which the secular law of diminishing returns will begin to operate.

As stated by Alfred Marshall this law proclaims that "whatever may be the future developments of the arts of agriculture, a continued increase in the application of capital and labour to land must ultimately result in a diminution of the extra produce which can be obtained by a given amount of capital and labour."[27] As all economists know, this hypothesis was basic to the assumptions of the classical economists regarding the future importance of the landlord class. That their theory has not been applicable in practice—at least in the western world—is not the fault of their logic. Rather it can be traced to their vast underestimation of the impact that the Industrial Revolution would have on the technology of agricultural production.

Happily for the western world, technological advances, together with the opening up of new areas for settlement and development, have favored mankind in the race between population pressure and food supply. Malthus' assumption that "subsistence" would increase only in an arithmetical ratio while population increases in a geometrical ratio suggests a race between a tortoise and a hare. As in Aesop's fable, however, the race has not followed expectations. In reality it has become a neck-to-neck contest between a rabbit that now shows signs of slowing down and a mechanical turtle that could run even faster if it had to, to keep its lead.

The favorable impact that technology has had on agricultural production is well demonstrated in the case of mechanization. Tractors, combines, steel ploughs and other mechanical devices have made it possible for farm families to operate many times the farm areas that were once considered workable. Even in densely

[26] Pendleton, *op. cit.*, stresses the importance of economic cost factors and political and institutional factors and shows that they operate alongside physical factors in limiting the potentialities of the tropics. Among the political and institutional factors, he mentions native attitudes regarding commercial agricultural production as compared with production in a subsistence or barter economy, the plantation and peonage system, local tax systems, growing nationalism, and relationships between white settlers and native populations.

[27] Alfred Marshall, *Principles of Economics* (New York: Macmillan, 8th edition, 1938), p. 153.

populated rural areas where extensive large scale farming is not practicable, mechanical power helps farmers to overcome unfavorable weather conditions during the planting season, cultivators and spray machines help to increase crop yields, mechanical pumps make irrigation or drainage practicable, and threshers simplify harvesting operations.

Among the many other technological improvements that have helped to increase production, one might list the development of higher yielding, faster maturing and disease-resistant crops, development of better grades of livestock and poultry, use of new livestock breeding techniques, increasing production and use of lime and commercial fertilizers, use of improved techniques for maintaining and building up soil fertility, and use of new sprays to control insects and weeds. In addition to these production improvements, developments affecting the processing, canning, freezing, storing, shipment and handling of foods have helped to reduce waste and have thus increased the supplies available for human consumption.

Important as these past improvements have been, the future holds promise of things to come. Even better crop and livestock strains are being developed. The recently developed technique of planting hardy grass seed from airplanes promises to help rehabilitate overgrazed ranges and perhaps even to make some desert lands available for grazing use. Medical developments will make the tropics more habitable. The recently announced vaccine for treating trypanosomiasis (a type of sleeping sickness carried by the tsetse fly) in cattle, horses and hogs, for example, may make millions of acres of African waste land available for commercial grazing use.[28]

[28] *Time*, January 10, 1949, p. 58, reports that this development may enable British Africa to "become the largest meat-producing area in the world."

Other developments can be expected. Hydroponic farming, still in the novelty stage, may become economic. The exponents of aquatic culture make broad claims for the food-producing capacity of the ocean and lake waters that cover three-fourths of the earth's surface. Some of these claims may develop into realities. Experiments show that yeasts, molds and algae products may provide highly nutritious supplies of food and feed in the future. The use of plant hormones and artificially-induced mutations may also have a significant effect upon future food production. Synthetic production of certain food products may become practicable. The use of isotopes and other products of the atomic age may have far-reaching effects on food production, just as the harnessing of atomic energy may reorient the problems of population and food distribution.

Whether one takes a pessimistic or an optimistic view of the future relationship between food supplies and population pressure depends in large measure on the faith he has in future technological improvements. It is easy to be pessimistic if one anticipates a rapidly increasing population with a constant or even declining food production potential. On the other hand, one cannot help but feel optimistic if he assumes continued technological advance in food production and a tapering off of the rate of population increase.

No one can say for certain which of these attitudes toward the future is right. The odds, however, seem to justify an attitude of optimism. There is no guarantee that agriculture will continue to benefit indefinitely from the discoveries of science and the bounteousness of nature. But present production trends indicate that the world's agriculture is still far from the point of diminishing returns. The promise of new develop-

ments and improved production techniques seems to stretch as far into the horizon as man can see.

The Problem For the Future

The food production potentialities of the earth are sufficient to provide adequate diets for a somewhat larger population than the world now has. But this does not mean that the problem of population pressure against the food supply is solved. Many associated problems must be dealt with before this goal can be achieved.

The difference between actual food production and ability to produce is very real. It is unlikely that production will be greatly increased until new market demands arise to absorb the new foods produced. Before this happens means must be provided for distributing the new products. For the most part the half of the world's population with low-calorie diets is not found in areas of high increased production potential. To bring up the nutritional standards of these peoples means must be found either to transport them to new settlement areas, to increase their domestic production of food, or to work out satisfactory international trade arrangements that will permit surplus food producing areas to trade their extra food for other products. This is one of the crucial problems that the world must face in putting its house in order.

Also there is the problem of encouraging the industrial and cultural development of the still backward areas of the world. Three-fifths of the world's people live in areas of high potential population growth. The normal progress of events will probably bring a considerable reduction in mortality rates in these countries within the next few decades. This suggests that the world's total population will climb well above the 3-billion mark by the end of the present century.

With such an increase in population in prospect, it seems improbable that these countries will be able to keep the living standards of their people much above a Malthusian level of subsistence unless they take steps to increase their productivity and reduce their rates of population increase or unless the other nations of the world throw open their larders to charity or open their gates to immigration. Population control policies may have a place in these areas. But the best way to secure this end can come through voluntary reductions in fertility rates. In the western world the cultural acceptance of lower fertility rates has lagged behind the industrialization and urbanization movement. Should a real effort be made to industrialize the areas of high population growth potential, it is possible that educational programs might succeed in bringing the fertility and mortality rates down at the same time that progress is made in increasing the per capita supply of food and other goods available for popular use.

Among the other problems that must be dealt with is the problem of maintaining and conserving the renewable resource base that provides the basis for man's food supply. Man has been wasteful in his exploitation of the bounteous stores of nature. He is fast reaching the point, however, at which he must stop his exploitative practices if he is to maintain his present standard of life. Properly used, the food production potentialities of the earth can supply man's needs for generations to come. But if man insists on gradually strangling the goose that lays his golden egg, he will eventually find himself reduced to a subsistence or starvation level.

Soil conservationists already know many of the answers on how to use land

and keep it too. They have discovered that erosion can be checked, that soil productivity can be maintained, and that depleted soils can be built up to their former or even to new levels of productivity. The application of this know-how is necessary if man is to solve permanently the problem associated with the impact of population pressure against the food supply.

Dead Land

Chronically Tax Delinquent Lands in Cook County, Illinois

By FREDERICK T. ASCHMAN*

LONG considered a problem of tax collection alone, "dead" land in the Chicago metropolitan area is more importantly and closely related to broader problems of planning and land use.

As applied to the some 250,000 parcels of chronically tax delinquent or abandoned vacant land in Cook County, the term "dead" implies virtual unavailability for constructive use and, while this is not strictly true in all instances, it is nonetheless a fact that such land, if not actually unavailable, is generally so difficult to acquire under Illinois foreclosure laws that the effect is the same as though it were actually removed from the market for all time. The net effect of this unavailability has been to place "dead" land in the category of a form of blight, costly to the area's municipal governments both from the standpoint of current expenditures and revenues and from the longer term view of the damage "dead" land causes by hampering and in some instances even preventing orderly community growth.

The background of "dead" land offers a very apt illustration of the relationship of proper land use to the effectiveness of the real property tax. Collectibility, which of course is usually one of the most attractive assets of the tax, became virtually nil in the case of these thousands of acres which were prematurely subdivided and, very often, badly subdivided as well. In hindsight, it is obvious that had there been effective controls on the one hand and adequate market analysis on the other, much of the land now "dead" would not have been subdivided, let alone peddled to gullible buyers by the thousands. But neither were controls imposed by municipalities in the Twenties nor did either builders or municipalities pay any regard for adequate analysis of markets and, as a consequence, broad expanses of immature land were subdivided and sold but never achieved economic use and eventually lost even speculative value. Underground and street improvements for most of this land were financed through the Illinois brand of special assessment, with significantly full municipal cooperation, and these special taxes as well as general taxes began to mount against the property. Since real property taxes are effective only when the property which is taxed has an economic use or when it has sufficient promise of economic use to be of speculative value, taxes against this prematurely subdivided land were virtually uncollectible and in many Cook County communities "dead" land has a delinquency as high as three to four times its value. Although this land is officially classified as "delinquent," the term is itself misleading for it implies that the tax obligation is due, not paid, but expected to be paid. Actually the huge amounts owing on the land never were practical "delinquencies" for the simple fact that the land has had neither economic use nor continued speculative value to the original owners dictated that the taxes as imposed would never be paid. They are now more truly "bad debts" incurred by persons who made "bad buys" in premature or submarginal subdivision or are the totally neglected

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debts of the promoter of the abortive subdivision.

Theoretically, if the original owners are unable (in this case, generally unwilling) to pay the tax on their porperty, the mechanism of the tax sale should provide for the transfer of the property to an owner who will pay the tax. This theory, however, presupposes that market conditions are constantly such that potential buyers are always available. In the case of prematurely or badly-subdivided land, this is of course untrue until the land matures or is re-subdivided in a suitable fashion. The situation is further complicated by the unsatisfactory state of Illinois tax sale and foreclosure laws. By the time a premature subdivision "ripens," the taxes, both general and special, have usually accumulated to a point where the title is subject to liens far beyond its worth, yet Illinois law so seeks to protect the original titleholder that foreclosure is deliberately designed to be a lengthy process which favors the "delinquent" rather than the potential owner who seeks the property for actual development purposes. This potential owner must either "make a deal" with the delinquent fee owner, who retains a powerful interest in the property despite the public's liens, or he must go through a rigorous process of involuntary foreclosure which not only requires close adherence to accuracy in title searches and notice-giving but which also provides the fee owner with a two-year period in which he may redeem the foreclosed property. Thus the chief specific objection to the current legal arrangement in Illinois is that it does not ultimately make "dead" land available to those best equipped to develop it. Since few builders or others who would put the land to economic use can afford to go through complicated legal procedure and to further tie up their money for the redemption period, the inevitable result is that the only persons who can develop "dead" land in a way which will bring substantial long-term tax revenues cannot for economic reasons acquire it.

The effects of "dead" land in Cook County are of two types, and both concern the taxpayer specifically and all citizens generally.

The first effect is, of course, that which incurs direct financial expense in the servicing of the hundreds of thousands of lots which produce nothing in revenue. On the county level, each must be assessed and each is involved in the whole collection process. The cost of these operations in Cook County has been variously estimated as well over $1,000,000 a year. On the local level, thousands of dollars are spent annually in each community which has "dead" land for policing, the cleaning of streets, servicing of water mains and sewer lines, maintenance of street lighting, and the extension of other services along frontage which is both undeveloped and tax delinquent or abandoned.

The second type of effect, probably more important in the long run, is that which either hampers or blocks orderly community development, thus denying to all housing consumers in the affected communities great potential economic and social benefits. In this case the original misuse of land now "dead" is causing current misuse of other land. Actually, "dead" land has little effect upon volume of building, since this is determined by "able-to-pay" demand, but it has a great deal to do with the location of building. And everyone loses when building is spread as thinly as it now is chiefly because "dead" land prevents its concentration in already organized communities.

More than 10,000 housing units have been built in the unincorporated areas

of Cook County since 1940. In most instances, the consumers of these units must accept inconvenient transportation, little or no fire protection, less police protection and, in addition, must in the beginning lay out and improve entirely new building sites. From a metropolitan viewpoint, this building in unincorporated areas means primarily that new land use patterns are being established prematurely. From the viewpoint of the municipalities where most of the building would have taken place had land been readily available, the chief loss lies in the denial of additional tax revenue.

In both Harvey and Skokie, two of the most-affected towns in Cook County, studies made by the Real Estate Research Corporation for the Cook County Housing Authority indicate that about twice as much building would have taken place in each community since 1940 had it not been for "dead" land. In Harvey this would have amounted to more than 500 additional units and in Skokie to more than 1500. Harvey alone would, it was estimated, have had increased tax revenues of more than $64,000 in that period had it had the building it might have had.

In the city of Chicago, where it is estimated that about half of the county's 250,000 "dead" parcels lie, building goes on at a snail's pace while the suburbs experience a building boom. The unfortunate fact is that many of those who go to the suburbs to build would be better off in the city, close to employment and cultural and education facilities.

In some localities building is pushed to the edge of the community rather than all the way out of it. Here the damage is just about as great, for the community must service this peripheral growth by extending its services across great areas of vacant land before it can reach the new sections, always at great cost.

A further hindrance to community development lies in the fact that often the mere presence of "dead" land is itself a blighting factor. Always unsightly and weed-producing, "dead" lots, when scattered about a partially built-up area, prevent the injection of "new life" into the neighborhood. And few neighborhoods can survive without this stimulation.

Obviously, the ramifications of the problem are such that over a period of years the effects of "dead" land on community development represent astronomical sums of money. Not all, of course, is potential tax revenue, but inevitably in each instance where land is uneconomically used or where utilities and services must be extended greatly to accommodate our great "urban sprawl," someone loses money.

Indeed, all the advantages which accrue to industry and commerce and to citizens in orderly community development can be listed as reasons for wanting to clear up "dead" land.

The problem of finding a solution to the "dead" land problem in Illinois is, of course, closely allied to the state's broader problems of law and administration throughout the field of taxation. This field clearly offers wide opportunity for reform and revision which will recognize the important relationship of the real property tax to efficient land use. And such reform should go hand in hand with the enlightenment of the state's municipal officials, in both the large cities and small villages, in the field of community planning so that a situation as preventable as the "dead" land problem may be avoided in the future.

But since a general reform of the tax operation and development of local planning policies are apparently some distance away, it is obvious that some immediate solution to the "dead" land

problem should be found immediately.

The major broad objective of any program to clear up "dead" land must be to get the title to the land in such legal shape as to enable its transfer to a builder when he needs it, free and clear. To insure the land's economic development to its highest and best use, the program must also include provisions which will enable the application of good planning processes, both by impulsion in the form of planning assistance offered the developer and by compulsion in the form of adequate controls by the municipal government.

Accomplishment of this broad objective will, in Cook County, require a shifting of emphasis from the current effort to "clean up back taxes" to a more enlightened effort to utilize "dead" land as a continuing source of future revenues. Unfortunately, both public opinion and that of numerous municipal and county officials foster the fallacy of believing that substantial amounts can be salvaged from the accumulated tax bills. In addition there are many who believe that a mere change in ownership is all that is necessary to be achieved under a "dead" land program. To these groups it must be emphasized and held vital that "getting the land back on the tax rolls" will not in itself be enough to resolve the problem finally and completely: that only sound economic development based upon good planning practice can produce *continuing* revenues.

At the present time a variety of plans have been devised but little action of any long-term value has ensued.

Actually in operation during recent years has been the County government's so-called "voluntary foreclosure plan," an amalgamation of the statutory provisions for foreclosure and of an apparently extra-legal administrative policy of the Board of County Commissioners. Under this process the fee owner of a piece of "dead" land may, through a second party, approach the County Board with a proposition to secure reduction in the amount of tax accumulated against the property through the years of delinquency. In the technical legal sense, the delinquent owner loses his property through a foreclosure suit to the second party. In the foreclosure process this second party "deals" with the Board under its policy that back taxes may up to a certain point be "compromised," that is, reduced by agreement. Until recently, the "purchaser" (the second party) who is actually the original owner's representative, could have the taxes "compromised" through 1940 and would then pay the full taxes assessed against the property since that date. Then his representatives having reduced the liens to a reasonable amount and paid them off, the original owner exercises his legal right of redemption and re-acquires his property for a much smaller amount than that which he himself would have had to pay in the form of accumulated back tax. Although this plan manages to recapture some of the back taxes and at the same time achieves a measure of actual use for "dead" land, it has obvious dangerous results, the greatest being that few owners of vacant land now bother to pay taxes at all, instead feeling that all that need be is to let the taxes accumulate until such time as their vacant property becomes marketable or usable, at which point they may use the "voluntary foreclosure plan" to reduce the amount of their debt. Clearly this policy is discriminatory against those who conscientiously meet their tax obligations and further encourages delinquency yet, apparently on the assumption that the housing shortage demanded quick release of more land, the "compromise date" has been recently advanced to 1946, full taxes being required only beyond that point.

In the closing minutes of the 1949 Illinois General Assembly, action was taken to provide a second plan for achieving economic development for "dead" land. Sponsored by the Chicago Bar Association, the new legislation, unfortunately not accompanied by a necessary appropriation, provided for the use of eminent domain in the acquisition of "dead" land and further provided the "quick-taking" principle used in federal land acquisition and used in Illinois only for highway purposes. The new legislation limits the use of quick-taking condemnation to blighted vacant areas which are defined substantially as undeveloped contiguous urban areas of not less than one acre where there exists diversity of ownership of lots and accumulated tax and special assessment delinquencies exceeding the fair cash value of the land. It can be called into use only upon the initiative of a private developer who submits a plan to the Illinois State Housing Board for the development of homes or rental housing or housing communities upon a site in a "blighted vacant area." Such plan must have the approval of the plan commission of the municipality or of the corporate authorities. If perchance a special session of the Assembly would provide the appropriation needed by the State Housing Board to finance its part in the "quick-taking" process, the act may be of considerable benefit in meeting the problem of availability of good land for housing.

However, although it may be conceded that the new plan may be instrumental in restoring much heavily taxed encumbered land to productive purposes, it must be recognized that it will not provide either a complete or effective solution to the problem of dead land. Apart from the immediate housing phase, the need is for orderly recapture of such land and *proper development* thereof in conformity with planning procedures which will most effectively promote community growth and progess. On the long-term, however, housing is only a phase of the over-all necessities of a constructive municipal planning technique and it must be given an emphasis commensurate with and not in excess of its proper relationship to community needs. Ample and authentic experience is available to prove that a community which consists exclusively of housing, for example, is an ill-planned community which falls far short of serving the needs of both its residents and its local government.

A third possible answer to at least part of the "dead" land problem may lie in Title I of the new Housing Act of 1949 which provides for federal loans and grants to aid in the acquisition of open land. While definite interpretation of the act remains to be made in detail, it appears likely that "dead" land in Chicago proper may be cleared in substantial amounts under these provisions since within the city the "dead" land areas are obviously capable of use in connection with the city's urban redevelopment program. In the outlying suburban communities, however, the question of interpretation is an important one yet to be solved but it is quite possible that the federal act may be useful to these municipalities if the act's administrators are willing to recognize that "dead" land itself represents an obvious form of blight. If this recognition is forthcoming the suburban areas which have little or no physical slums by usual definition may be assisted in restoring to use the lands which now hamper their development just as efficiently as if they were subject to the more "accepted" forms of blight. Similarly, the suburban areas might benefit from the federal act if they can be included in a metropolitan housing plan which will show that their development may be an integral part of the whole

broad redevelopment program in the central city. Certainly this latter approach would be the more intelligent since the fact cannot long be avoided that suburban areas are not independent communities unto themselves but are rather a part of the whole metropolitan community.

Still a fourth mechanism has been proposed by the Housing Authority of the County of Cook which, while it endorsed the Bar Association's quick-taking proposal as an emergency measure for housing purposes alone, also seeks to establish a long-range program which will emphasize economic development of "dead" land to other uses in addition to housing.

In essence, the Housing Authority's plan would consist of a form of reversion of long-delinquent property to the County, or perhaps city or state, government, with the additional proposal that the County set up a planning staff to handle disposition of reverted properties in a manner consistent with the best interests of the local municipalities concerned. As provided in the Authority's program, points being listed below, "dead" land would be acquired in an orderly fashion, in accordance with good planning principles, and put to its highest and best uses:

1. Full power should be provided to County government to acquire "dead" land through foreclosure in such amounts and at such a pace as it deems necessary and desirable.

2. Provision should be made that the County may hold, prepare for use, or sell "as is" the "dead" land it so acquires, the sale taking place after expiration of the two-year redemption period and upon condition that the economic use of the land be assured.

3. Statutory assurance should be made to the holders of special assessment bonds that, upon ultimate sale by the County, they will receive an equitable share of the proceeds.

4. The County should, upon utilization of powers and duties so granted and imposed, provide for: (a) Establishment of a trained planning staff to program the orderly recapture of "dead" land. (b) Effective liaison with local municipal officials in the planning for disposition of publicly-held land.

Whatever the mechanism or mechanisms finally put to use in solving the problem of "dead" land, the opportunities are great for integrating its solution into the exciting new potentialities for urban redevelopment. The bright side of the picture is that, notwithstanding the serious and purse-draining effects of "dead" land in its present state, the thousands of parcels of encumbered land offer a planning tool which would enable municipalities to recoup a considerable part of the losses which at least partly resulted from their failure to plan or to plan properly in the days gone past.

On the Current Readjustment of Land Tenure in Japan†

By LAURENCE I. HEWES, JR.*

UNDER the present Japanese Land Reform Program the ownership of over one-third of the cultivated land of Japan has shifted. This program is the latest of several major readjustments in land tenure arrangements which have occurred in the course of Japanese history.[1] It is probably the only one of these reforms designed for the direct benefit of Japanese farmers. The previous major changes in land tenure seem to have been projects to increase power or revenue of a government or feudal ruler.

Allied and Japanese authorities responsible for planning the current program have endeavored to preserve all useful aspects of traditional tenure arrangements while removing permanently the threats to stability of an unbearably exploitative tenancy system. An attempt will be made in this paper to describe briefly some salient features of this system in order to indicate the manner in which it became widespread in Japan; as well as some of its effects on the social, political, and economic life of Japanese farmers. In this connection it should be emphasized that the land reform program is part of a broad structure of agrarian reform which includes the establishment of farm cooperatives and agricultural credit facilities.

Background of the Land Tenure System of Japan

1. The Geography of Japanese Agriculture. Japan's eighty million people live for the most part on the coastal fringes and in narrow valleys of rather short turbulent streams of four principal Japanese islands (Hokkaido, Honshu, Shikoku, and Kyushu). Japanese culture has been developed in these circumscribed areas which have afforded space for both rural and urban development. The cultivated land area of about 5½ million cho[2] has a tremendous population density—one of the highest in the world.[3] This area is divided into nearly 6 million tiny farms which average about one cho each in area.[4]

2. The Japanese Cultivator. Japanese farmers generally work with only a few hand tools. They possess very few mechanical aids and have an insufficient supply of draft animals. In their scheme of things land is more important than labor; consequently, operations are designed to economize use of land and to expend extraordinary amounts of labor. In terms of production the results are remarkable.

The aggregate annual agricultural production of Japan has been sufficient to

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[1] Among these events perhaps the principal ones have been the Taikwa Reform 646 AD, the Statutes of Taiho 701 AD, the Land Measurement Ordinance of Hideyoshi 1587, and the Land Tax Revision of Meiji 1873.

[2] The principal units of Japanese agricultural land area measurement are cho and tan. 1 cho equals 2.451 acres, 1 tan equals .2451 acres, 1 cho equals 10 tan. Attention is called to the rough approximation between the cho (2.45 acres) and the hectare (2.47 acres).

[3] *Japanese Agricultural Land Statistics*, General Headquarters Supreme Commander for the Allied Powers, Natural Resources Section, Report No. 101, Tokyo, 1948, p. 7. The agricultural population per square kilometer of cultivated land in Japan is 570. The next highest world density shown in this report is Korea with 418 persons per square kilometer.

[4] *Ibid.*, p. 19, "Managing Scale of Farm Households in 1944."

supply nearly eighty per cent of the staple food requirements of the Japanese in recent years.[5] Slightly over half the cultivated area is in paddy fields, and rice is the principal crop.[6] Japan is one of the important rice-producing countries of the world, and her production per unit of area has been considerably higher than any other Asiatic country and any other major rice-producing country.[7] This result is due largely to Japanese cultivators, their intensive methods and the system of agriculture. As the Japanese population grows, the demand for food increases. Thus, the role of Japanese farmers is likely to become ever more significant. Consequently, it was necessary in changing the tenure pattern to include plans for preserving the unique values of the established production system.

These small individual farms have endured the impacts of many changes over the centuries. Throughout the recorded history of Japan,[8] small tilled tracts, divided into paddy and upland fields and cultivated by a single family, seem to have been a typical feature of the culture.[9] Apparently, the population density of cultivated areas has been relatively large for at least ten centuries. Moreover, no intervening stage of pastoral or communal agriculture appears to have occurred in the feudal or prefeudal era. In contrast to agrarian developments in Europe the persistence of individual family farm units is remarkable. Noteworthy, too, has been the stubborn persistence of the peasants to achieve and maintain individual proprietorship. A further evidence of the durability and persistence of this form of enterprise in more recent years is the lack of change in the number of farm families in the years from the Meiji Restoration in 1868 up to the latter years of World War II (1941-1945).[10]

The durability of the Japanese peasant and his farming system has been tested in a stern school. Throughout a long feudal era his social status was not inferior, but his economic condition was often wretched. Feudal rulers, or shoguns, imposed cruel tax burdens on cultivators. In the Tokugawa era (1615-1868) it was thought that "the best policy for controlling the farm population is to allow it just enough to live on."[11] The administrative structure of the Shogunate, even capacity to maintain its sovereignty, was based largely on the power of these lords to control the distribution of the rice supply. This implied almost absolute control of production expressed in ability "to impose taxes upon farmers to such an extent that they could neither live nor die."[12] Inconsistencies and internal strains of the Tokugawa regime foretold its collapse. Stratagems of these rulers to avoid a final downfall involved further exploitation of the peasants. The close of the era signified the peasants' release from thralldom, but new problems soon appeared.

3. The Emergence of Tenancy. Although peasants had been miserable under the Tokugawa shoguns they enjoyed a certain

[5] Indigenous production in 1948 would supply sufficient food to provide about 80 percent of the staples required to maintain a ration of 2160 calories for an 80-million population.

[6] *Ibid.*, p. 11. Paddy fields occupy 55.5 percent of the cultivated area. Rice was grown on 39.1 percent of the total cultivated area in 1944.

[7] *Agricultural Statistics 1946*, United States Department of Agriculture, Washington, D. C., United States Government Printing Office, 1946, p. 30, Table 36 (1930-1935 average production).

[8] The Kojiki is the earliest Japanese historical record. This book appearing in 712 AD mentions events of the first centuries of the Christian era. See G. B. Sansom, *Japan A Short Cultural History* (London: The Cressett Press, 1932), pp. 18-22.

[9] K. Asakawa, *The Documents of Iriki* (New Haven: Yale University Press, 1929), p. 71.

[10] *Japanese Agricultural Land Statistics, op. cit.*, p. 6. In 1873 there were 5,640,000 farm households while in 1944 there were 5,536,000. No shifts of consequence occurred in the interim.

[11] Enjiro Honjo, *Economic Theory and History of Japan in the Tukogawa Era* (Tokyo: Maruzen Co., Ltd., 1943), p. 31.

[12] E. Herbert Norman, *Japan's Emergence as a Modern State* (New York: Institute of Pacific Relations, 1940), p. 21.

security in their feudal status. This security was swept away upon the advent of Meiji in 1868 with joint introduction of individual land ownership and legal alienation through sale. Whereas at the beginning of Meiji most farmers were nominally free-holders, increasing numbers became tenants, both as a result of the emancipation of land from feudalism and of the introduction of a money economy.[13] By 1892 nearly forty per cent of all agricultural land was operated by tenants who had formerly been land owners.[14] The new tenant class now paid an exorbitant rent. Indeed so profitable did new land owners find this method of exploitation that they refrained from taking up the burdens of direct management, preferring to remain as the beneficiary of the labors of tenants.[15]

Combined pressures on peasants had become critical by 1920. In the intervening half century tenancy had become entrenched with clearly defined exploitative characteristics. Security of tenure of a tenant cultivator rested on a vague, usually verbal agreement. Rent was paid in kind and amounted to about half the crop. Tenants took all risks and expenses, including many burdensome taxes. Landlords were frequently creditors demanding usurious rates of interest.[16] In addition to these difficulties tenants shared with owner-cultivators the effects of a squeeze between relatively low agricultural prices and high prices for all things farmers needed to buy. These price difficulties were aggravated by recurrent collapses in rice prices during the 1920's and early 1930's. During the period many farmers were selling rice and probably most of the other staple crops at prices below costs.[17] Under this accumulation of burdens a traditionally stable Japanese agricultural system gave indications of having reached its peak load limit. It was rapidly becoming impossible for these small producers to give half their gross farm incomes to landlords and yet survive.

4. Attempts to Solve the Problems of Tenancy. One indication of stress was a sharp rise in the number of tenant-landlord disputes in the years after World War I (1914-1918). These increased to the impressive figure of 6,804 in 1936 and the average dispute involved four landlords and twenty tenants.[18] Another symptom of tension was emergence of farmer organizations concerned with tenant problems. The Japan Farmers Union in 1922 was the first of these organizations to assume national proportions. Political action took the form of a short-lived (3 hours) Farmer Labor Party in 1925. The whole movement was subjected to considerable government pressure and began to decline in 1934. It disappeared completely in 1941.[19] One observer attributes these phenomena partially to the introduction of democratic ideas in Japan after World War I.[20] A more likely interpretation appears to be that these actions stemmed from desperation. Japanese farmers had been unable to resist forces which pushed them into tenancy. Yet, when an aggravation of these in combination with other factors threatened their status as cultivators, their ingrained will to remain on the land asserted itself, and they began to fight back. Such manifestations of distress impressed the Japanese Government with the need for remedial action. Legisla-

[13] *Ibid.*, p. 136. This occurred as the result of a series of measures dated 1871, 1872, 1873.

[14] *Ibid.*, pp. 137, 143.

[15] *Ibid.*, pp. 149-154.

[16] *Farm Tenancy in Japan*, General Headquarters Supreme Commander for the Allied Powers, Natural Resources Section, Report No. 79, Tokyo, 1947, pp. 1, 618, 20.

[17] E. B. Schumpeter and others, *The Industrialization of Japan and Manchuko, 1930-1940* (New York: The MacMillan Company, 1940), p. 136.

[18] *Farm Tenancy in Japan, op. cit.*, p. 54.

[19] *Ibid.*, p. 27.

[20] S. Nasu, *Aspects of Japanese Agriculture* (New York: Institute of Pacific Relations, 1941), p. 19.

tion to aid tenants was proposed and some of the milder proposals were enacted.[21] These measures, now chiefly significant as historical predecessors of the present Agrarian Reform Program, sought (1) to provide loans by which tenants could buy land, (2) to improve the conditions of tenancy and prevent evictions, and (3) to provide for conciliation in tenant-landlord disputes. Unfortunately, a more realistic approach was needed. Enacted measures lacked provisions requiring landlords to sell land to tenants. Furthermore, no official control of land prices was established. Lacking this control, land prices were simply out of the tenants' reach in many instances. These actions also failed to prohibit unjustified evictions and arbitrary increases in rent. Such omissions weakened the effectiveness of the program and its failure is shown by a net increase of 9,000 in the total number of tenants between 1926 and 1936.[22]

Thus, by 1930, the most serious agrarian problems were still unsolved. Attempts of the farmers to find relief through political actions and organizations had not been effective, and remedies proposed by government had avoided basic issues. Farm problems were ready to become a political football in the hands of a politically-minded military group which sought power. Numbers of younger officers of the Japanese Army were of rural origin and a majority of enlisted personnel were peasants.[23]

Japanese Land Tenure and Japanese Military Policy

It is difficult to determine whether the alliance between Japanese military and agrarian interests was a deliberate attempt by the military to exploit farm discontent or a more spontaneous coalition of interests.[24] However, such an alliance did exist. Agrarian interests were involved in a series of political assassinations which, from 1930 to mid-1932, paved the way for control of government by the military.[25] It appears, however, that the military sought unified farm support and avoided an attack on those farm problems, including tenancy, which might divide the agrarian group. In spite of this, tenants and the more disgruntled of the smaller owner-farmers may have been comforted by the plans for overseas conquest with its possibilities of opening up new land resources. This agrarian support helped to place the military in a position to embark on its dismal adventure—a support which appears to have arisen from dynamics of widespread rural discontent, caused chiefly by inequities of tenancy.

War sometimes presents problems which are very different from problems of gaining political support for the making of war. Measures which are politically unwise from the viewpoint of warmakers have a way of becoming military necessities. Such, in part, may be an explanation of the series of law and ordinances for relief of tenants issued by the government after 1937. These tended to meet directly some basic problems of farm tenancy and were a distinct contrast to hesitant policies of the previous seventeen years. Some of this legislation was in effect after cessation of hostilities on September 2, 1945, and portions were adopted into legislation on which the present land reform program is based. Such legislation included: (1) The Agri-

[21] A loan program to enable tenants to buy land was inaugurated in 1922 and enlarged in 1926. A tenant-landlord conciliation law, the Tenant Conciliation Law of 1924, was enacted.

[22] *Farm Tenancy in Japan, op. cit.*, p. 33.

[23] *Japanese Army, Notes on Characteristics, Organization Training, etc.*, January 1942. Issued by the General Staff Army Headquarters, Department of the Army Commonwealth of Australia, Melbourne, p. 6.

[24] Schumpeter, *op. cit.*, p. 124.

[25] Hugh Byas, *Government by Assassination* (New York: Alfred A. Knopf, 1942), pp. 64, 65, 88, 89.

cultural Land Adjustment Act of 1938, (2) The Farm Rent Control Ordinance of 1939, (3) the Temporary Agricultural Land Management Ordinance of 1941, amended in 1944, and (4) Temporary Agricultural Land Price Control Ordinance of 1941.

Provision was thus made for a system of controls which established (1) a brake on eviction of tenants, (2) the freezing of land prices and discouragement of all sales of land except to tenants, and (3) substitution of cash for payments of rent in kind.[26] In spite of the more direct nature of these measures adequate means of enforcement were not provided. Consequently, these controls tended to remain as statements of policy rather than as a program of action. Even so, some of the concepts are important. These include (1) strict control by public agencies of all transactions in land, (2) a fixed cash price for land and for land rent, (3) prohibition of rent payments in kind, and (4) prohibition of eviction of tenants except for cause. It should be noted that formulae for calculating rents and land prices are still in effect and have been incorporated into current legislation.

Japanese Land Tenure and Allied Policy

The role of agrarian interests in providing political support for the Japanese war party was known to the Allied Powers. The connection of these facts with causes of agrarian unrest led to exposure of inequities of the land tenure system as one of the specific underlying causes of war. Reform of the land system in the interests of creating a democratic, stable and peaceful agriculture in Japan was therefore an Allied objective deriving sanction from the terms of surrender and the Potsdam Declaration. In December 1945 General Douglas MacArthur instructed the Japanese Government to present a program for agrarian reform including provisions for readjustment of the land tenure system.[27] The following table shows proportional distribution of land, both by ownership and management, at about the time of the Japanese surrender. These figures indicate that the great majority of cultivators and owners are very small in size. However, there is much unevenness in the distribution of land whether from an ownership or cultivation viewpoint.

TABLE I. PROBABLE PROPORTIONAL DISTRIBUTION OF AGRICULTURAL LAND BY SCALE OF CULTIVATION AND OWNERSHIP: 1941-45

(*by percent*)

SCALE	CULTIVATION		OWNERSHIP	
(cho)	*Households*	*Area*	*Owners*	*Area*
0— 0.5	33.6	9.5	47.7	14.7
0.5— 1.0	30.0	21.2	26.4	17.1
1.0— 3.0	26.8	35.7	18.6	24.9
3.0— 5.0	6.1	13.9	4.4	14.4
5.0—10.0	2.2	7.7	2.1	12.6
10.0—50.0	0.9	6.2	0.8	12.1
Over 50.0	0.4	5.8	0.1	4.2
TOTAL	100	100	100	100

Source: Adapted from *Farm Tenancy in Japan*, *op. cit.*, Tables 5 and 6, pp. 48, 49.

These data indicate that a considerable proportion of land is owned by a very small per cent of owners; the same is true to a lesser degree of amounts of land managed by cultivators. Differences in proportions of land owned and land cultivated by these groups is probably accounted for by the owners of larger tracts who did not themselves engage in cultivation or who cultivated only a portion of their holdings and leased the remainder.

At the other end of the scale, again among the very small owners and culti-

[26] K. Owada, *Explanation of Agricultural Land Reform* (Tokyo: Nominsha, 1947). Typed English translation by J. M. Mizoguchi, pp. 12, 13. (In the files of Agriculture Division, Natural Resources Section, General Headquarters Supreme Commander for the Allied Powers, Tokyo).

[27] General Headquarters Supreme Commander for the Allied Powers, *Memorandum for Imperial Japanese Government*, "Rural Land Reform," December 9, 1945.

vators, proportions of owners and cultivators are different. This may be partially accounted for by small cultivators who farm varying amounts of tenant land in addition to land they own. Also, many small owners were not cultivators at all but constituted a class of petty landlords. Perhaps we may conclude that patterns of ownership of agricultural land in Japan were different from patterns of cultivation, and that it was patterns of ownership which determined tenancy patterns.

The proportionate amount of tenancy existing among Japanese farmers at the end of hostilities is indicated as follows:[28]

CLASSIFICATION [a]	*Percent of Households*	*Percent of Area Operated*
Owners...	32.0	54.2
Part-owners		
Part-tenants.....	39.8	.....
Tenants.....	28.2	45.8[b]
TOTAL.....	100.0	100.0

[a] The Ministry of Agriculture and Forestry has adopted the following definitions of individuals with tenure rights: *owners* are those who own at least 90 percent of the land they cultivate; *part-owners* own between 50 and 90 percent of the land they operate; *part-tenants* own less than 50 and more than 10 percent; and *tenants* own less than 10 percent of the land they operate.

[b] This figure includes all land under tenant operation whether cultivated by a tenant or a part-owner.

From 1935 to 1944 numbers of owner-farmer households increased 0.6 per cent, part-owner-part-tenants decreased 2.3 per cent and tenants increased 1.4 per cent.[29] As late as 1943 rent in kind appears to have been paid by cultivators of 66 per cent of the cultivated area, and rentals for rice paddies averaged 48 per cent of yield.[30] Between October 1945 and February 1946, landlords sought eviction of 250,000 tenants.[31] These facts indicate that the tenancy system was still strong at the close of hostilities, and in its negative aspects it showed no particular effects from various war control measures.

The Formation of a Land Reform Program

Agrarian policy of the Allied Occupation in Japan was part of general occupation policy directed toward the removal of causes for war and establishment of democratic institutions. In keeping with this policy the Allies insisted on abolition of the inequitable tenancy system. This policy did not seek to disrupt Japanese agriculture, but rather to preserve its inherent stability and productivity by removing factors which tended to weaken it.

A necessary element in such a policy was a drastic reduction in amounts of tenancy and effective control of any remaining landlord-tenant relations. This involved the transfer of large amounts of privately-owned agricultural land to tenants at prices and on terms commensurate with tenants' ability to pay. Moreover it required auxiliary safe-guards in order to prevent a reversion to tenancy of newly-established owners.[32] The Japanese were expected to work out the details of a program within this framework of policy. It would be distinctly unfair to create the impression that there were not, among Japanese Government officials and professional agriculturalists, many persons who were anxious to find a solution to the tenancy problem. In some instances such persons had, before the Occupation, pointed out benefits in terms of production and stability of widespread ownership of land by cultivators. They had criticized essential weaknesses of earlier schemes for creating peasant proprietors, particularly the futility of burdening

[28] Adopted from *Farm Tenancy in Japan*, *op. cit.*, Tables 10 and 11, p. 50.

[29] *Japanese Agricultural Land Statistics*, *op. cit.*, p. 16, "Number of Farm Households."

[30] *Ibid.*, p. 43, "Percent of the Tenanted Areas Classified by the Forms of Farm Rent," p. 46, "Variation of the Rates of Farm Rents."

[31] *Ibid.*, p. 72.

[32] "Rural Land Reform," *op. cit.*

tenant purchasers with purchase obligations based on excessive land prices, as well as the lack of provisions compelling landlords to sell their land.[33] Once freed from frustrations and oppressions of the pre-surrender regime a number of these persons set out to capitalize on opportunities afforded by Occupation policy to effect needed reforms.

In judging Japanese proposals for tenure reform Occupation authorities had the benefit of advice and experience of the Allied Council for Japan. This group, composed of British, Chinese, Soviet and American representatives, carefully considered such proposals and were in substantial agreement with the chief features of the program as finally enacted.[34] Basic land reform legislation was passed by the Japanese Diet and promulgated on October 21, 1946. This legislation consisted of two basic statutes, (1) the Owner-Farmer Establishment and Special Measures Law (Law Number 43, October 21, 1946), and (2) the Agricultural Land Adjustment Law (originally Law Number 67, April 2, 1938, revised by Law Number 64, December 28, 1945, revised by Law Number 42, October 21, 1946).[35]

The Land Reform Law and the Land Reform Program

Outline of the Law. The Owner-Farmer Establishment and Special Measures Law provides for transfer of agricultural land from owners to tenants. Its stated purpose is to establish ownership widely in order to stabilize the status of cultivators, increase production and promote democratic tendencies. This law contains the following provisions:

Authority for Land Purchase. For the purpose of this law, agricultural land is divided into "owner-farmer" land, which is land cultivated by an owner, and "tenant-farmer," which is land cultivated by a tenant. The government is authorized to purchase the following land:

(a) All "tenant-farmer" land whose owners do not reside in the city, town or village in which the land is situated.

(b) All "tenant-farmer" land in excess of 1 cho (4 cho in Hokkaido) owned by residents of the city, town or village in which the land is situated. (It is estimated that the amount of "tenant-farmer" land thus retained by resident landlords will approximate 13 percent of the total cultivated area).

(c) All "owner-farmer" land owned by cultivators in excess of 3 cho (12 cho in Hokkaido) unless it can be proved that the owner has sufficient family labor to cultivate efficiently a greater area or unless subdivision of the larger area would result in decreased production. In addition the government may purchase (1) agricultural lands owned by juridical persons whose agricultural land is not required for its principal purpose, (2) agricultural land not in use or which is being mis-used or ineffectively used, (3) non-agricultural lands adjacent to agricultural lands whose use is essential to operations on the agricultural land. In addition to agricultural land, purchase authority extends to water rights, trees, buildings, and equipment.

Land is selected for purchase by the land commission of the city, town or village in which the land is situated. A description of the land selected by local commissions is incorporated in a "purchase plan" which is reviewed by the prefectural land commission and if approved by that body the plan is passed to the prefectural governor who consummates the purchase on behalf of the government who thus

[33] Y. Yagi, "The Current Land Problem and the Establishment of Peasant Proprietorship," *Kyoto University Economic Review*, December 1936, p. 78, S. Kawada, "The Establishment and Maintenance of Peasant Farms," *Kyoto University Economic Review*, p. 95 (cited in *Farm Tenancy in Japan*, *op. cit.*, pp. 35, 37).

[34] Verbatim Minutes of the 3rd, 5th, 6th, 7th meeting of the Allied Council for Japan, April 30, May 29, June 21, June 17, 1946. Although in agreement with specific recommendations, nevertheless, the Soviet member introduced separate proposals for land reform in the 7th meeting, June 17, 1946.

[35] These two statutes are commonly referred to as the Land Reform Law and the program which they authorized is usually spoken of as the Land Reform Program. This usage has been followed in this paper.

acquires title. Thereupon, all rights of original owner are extinguished. The law provides an appeal procedure and establishes a period of grace for filing and hearing such appeals. These may be made to local and prefectural commissions. Suits may be filed in regular courts also.

Formulae for establishing prices at which land is to be bought and sold under this law are similar to the formula developed in the Temporary Agricultural Price Control Ordinance of 1941 mentioned above. The seller receives a 30-year bond which is not negotiable during the first five years of its term.

Authority for the Sale of Land. The law authorizes the government to sell land to eligible persons selected by land commissions of cities, towns and villages. In general, the tenant who has been the established cultivator as of November 23, 1945, on a specific tract has a priority over other applicants for the acquisition of that tract. The government price of the land to the purchaser is usually the same as the price which the government paid to the original owner. Selling procedures are similar to purchase procedures. The land may be paid for by the purchaser either in cash or in installments over a term of thirty years at 3.2 percent interest. Annual payments of purchasers may be modified or the term of payments may be extended when adverse circumstances are encountered by the purchaser. Liens and encumbrances may not be created against lands purchased from the government under this program without prior official approval. The purchaser may also apply for the sale to him of water rights, rights to other land, trees, buildings, etc. Under the law the transfer of land from the owner to the tenant is the result of two transactions in the first of which the government acquires the land and in the second of which it sells the land to the eligible purchaser. These two steps do not necessarily occur simultaneously. This procedure avoids direct negotiations between landlord and tenant. However, it should be clear that, while land transfer is accomplished through the government, payments by the government and to the government are intended to balance.

The Agricultural Land Adjustment Law establishes public policy for all transactions in agricultural land and also designates the composition and method of election of public bodies principally concerned with execution of this policy. These are agricultural land commissions which are established in each city, town or village. A prefectural agricultural land commission also is established. These bodies have power to approve all transactions in agricultural land. Rents are established by their decision within ceilings of 25 per cent for paddy fields and 15 per cent for upland fields. No transaction involving agricultural lands including purchase sale, lease, transfer of lease, termination or recision of lease shall be undertaken without their prior approval. Furthermore, all leases must be in writing. Under certain conditions these commissions are empowered to settle disputes between tenants and landlords.

The agricultural land commissions of cities, towns and villages are composed of ten elected persons. All farm households participate in elections of commissioners according to their classification as tenants, owner-cultivators or landlords. Tenants elect five representatives who must be tenants. Owner-cultivators elect two, and landlords, three representatives. Prefectural agricultural land commissions have twenty elected representatives. Each classification of tenant, owner-cultivator and landlord is represented in

the same proportions as for local commissions.

Administration of the Land Reform Program. The Minister of Agriculture and Forestry is directly responsible for execution of the land reform program. His responsibility extends to 46 prefectures and to more than 11,000 cities, towns and villages. The work of supervision and direction is actually performed by a staff of 139 persons in the Agricultural Land Division of the Agricultural Administration Bureau of the Ministry.[36] These officials have planned, directed and observed the work of 46 prefectural agricultural land departments through 6 district land offices of the Ministry.

In addition to the task of over-all administration these officials are responsible for the preparation of cabinet orders and of amendments to the basic legislation, since a law of such scope would inevitably reveal deficiencies on being placed in operation. Several amendments to the original legislation have been presented to the Diet. These have been mostly of a technical nature not involving policy. Requests for legislation have also included proposals for financing administrative costs of land reform which have approximated 5.4 billion yen to December 31, 1948. Maintenance of adequate liaison with the staff of General Headquarters, Supreme Commander for the Allied Powers, is still another responsibility of the Ministry.

Considerable time and money has been expended by the Ministry to provide the rural public with educational material on land reform. Pamphlets, leaflets, posters, radio programs, travelling lectures, and daily newspaper material have been prepared and issued to all villages and, in some cases, to all farmers. A need for educating members of agricultural land commissions was met through a number of short intensive training courses at conveniently located centers throughout Japan.

The Prefectural Governors acting as agents of the Ministry of Agriculture and Forestry are responsible for actual enforcement of land reform law in cities, towns and villages. It is the prefectural governors who are responsible for determining legality of sale and purchase of all land transferred and of certifying amounts due and payable for such transfers. Many responsibilities of governors are discharged through the 5667 employees in 46 prefectural agricultural land departments.

This work involves technical review of each individual recommendation for purchase or sale made by local agricultural land commissions before the governor's signature is affixed to a writ of purchase or sale. Guidance and instruction is also furnished to local land commissions in especially complicated cases, particularly where appeals from decisions of either or both the local and prefectural commissions have been made. In such cases officials of the prefecture may make detailed investigations including visits to the land in question.

The Agricultural Land Commissions of cities, towns and villages and of prefectures select land to be purchased and persons to whom it is to be sold. Each such decision by local commissions may affect life-long acquaintances of commission members, and frequently involves relatives. All these decisions and indeed meetings of commissions are open to public inspection. In the past two years the commissions' responsibility for land transfer has been very heavy and has required a great deal of time. Members of these bodies are all busy people on

[36] All data relating to land reform operations used in this paper are based on preliminary unverified reports of the Ministry of Agriculture and Forestry. Some of them in part at least are estimates. They are used for purposes of general illustration and are believed to be sufficiently accurate for such a purpose.

their own account whose work on the commissions is without compensation. The detailed paper work of local commissions and some of its technical work as well are performed by about 34,000 clerks in the commissions' employ. Those who have observed the work of these commissions are impressed with their record of achievement and the willingness of their members to serve the community. A total of 116,376 commissioners have been engaged in this work.

Chronology of Performance

The Japanese Government undertook to accomplish the transfer of all land subject to purchase and sale provisions of the Land Reform Law between January 1, 1947, and December 31, 1948. In addition to actual transfer of land, this commitment involved, as preliminary steps, registration of each tract of agricultural land and of each farm family. Land was classified as to its status as "tenant land" or "owner-cultivator land." Each farm family was registered as to its status as tenant, owner-cultivator, or landlord.

These registrations indicated that between 1.5 and 1.8 million cho of land would be subject to transfer. Allied observers felt that the amount of land indicated above was likely to be less than the amount finally transferred. Between January and March 1947 election of land commissions was completed, and the commissions were established. The first land was purchased on March 31, 1947. Progressive stages and the final accomplishment of the program are shown in Table II.

While transfer phases of the land reform program are practically complete and a minimum of 2.7 million new owners are in possession, two steps are incomplete. These are, first, the collection and disbursement by the government of funds due or payable by the government arising from these transfers. About 11.0 billion yen must be transferred by cash and contract to the government, and an equal sum disbursed in the form of bonds by the government. This work has been under way since June 1948, and all work except that connected with servicing annual installment collections, bond servicing, etc., should have been completed by April 1949. Second is the formal

TABLE II—Comparison of Estimated and Actual Progress of Land Transfer Plan of the Japanese Land Reform Program*

Date	Scheduled for Acquisition (Cumulative)	Actually Acquired (Cumulative)	Scheduled for Sale (Cumulative)	Actually Sold (Cumulative)
	(*Cho*)	(*Cho*)	(*Cho*)	(*Cho*)
March 31, 1947	129,259	129,259	.....	.....
July 2, 1947	294,751	348,286	.....	.....
October 2, 1947	475,831	697,016	60,000	91,366
December 31, 1947	916,784	1,168,652	150,000	183,150
March 31, 1948	1,348,178	1,342,764	380,000	427,320
July 2, 1948	1,456,657	1,723,831	880,000	761,615
October 2, 1948	1,513,784	1,797,809	1,180,000	1,513,540
December 31, 1948	1,542,463	1,848,334	1,540,000	1,736,150

Source: Ministry of Agriculture and Forestry.

* This table does not include 198,052 cho of pasture land acquired under the Land Reform Law since the transfer of this land was not contemplated in the original program and its subsequent acquisition requires explanation beyond the scope of this paper.

recording of the transfer of land to new owners. Both steps are simple administrative tasks, although tedious and complicated by excessive dispersion and subdivision of Japanese agricultural land resulting in a transfer of nearly 27 million separate tracts of land. New owners in many cases receive land formerly belonging to several different owners. Holdings of a single farmer may also be incorporated in holdings of several new owners.

Discussion

The Japanese Land Reform Program is part of a broader structure of agrarian reform which is taking shape in Japan. However, more general reconversion is still incomplete, and objectives of the land transfer phase have been barely attained. Consequently, only a partial appraisal can now be made of this aspect of the overall proposal. Perhaps these changes can best be illustrated by quantitative shifts immediately resulting from transfers of land ownership. Table III endeavors to illustrate these shifts.

Attention is invited to the following changes which these figures show: (1) The number of large owners is greatly reduced (Table IIIA). (2) The largest increase is in the group owning units between one and three cho (Table IIIA). The disappearance of non-resident owners means the abolition of the absentee class (Table IIIB) (3) The increase in the proportions of the resident-cultivator group composed of owner farmers still further increases the preponderant size of that group (Table IIIB). A further point not clearly indicated in the case of resident non-cultivators (Table IIIB) is the shrinkage in the amount of land now owned by this group who are permitted to retain a maximum of 1 cho.

These alterations in patterns of land ownership directly affect income distribution from over two million farms. In terms of land in paddy fields alone, about 55 million bushels of rice which formerly went to landlords are now retained by the new tenant owners.[37]

[37] Rentals have averaged about half the average production which on the amount of paddy fields involved in these transfers (1,100,000 cho) averaged about 20 koku per cho (1 koku equals 5.11 bushels). Thus, rentals for paddy fields would have been about 50 bushels per hectare, approximately 55 million bushels.

TABLE III—Estimated Changes in Distribution of Owner Households Due to Land Reform
(Percent of Owner Households)

A—Estimated Changes in Distribution of Owners by Scale of Ownership				B—Estimated Changes in Distribution of Ownership by Class of Owner			
Scale (*Cho*)	Aug. 1, 1947	Dec. 31, 1948	Net Change	Class	Aug. 1, 1947	Dec. 31, 1948	Net Change
0—0.5.....	48.1	49.2	1.1	Absentee Owner	11.2	0.0	—11.2
0.5—1.0.....	24.9	25.5	0.6	Resident Non-Cultivator Owner	3.3	2.97	—0.33
1.0—3.0.....	21.3	23.7	2.4				
3.0—5.0.....	3.0	0.9	—2.1	Resident Cultivator Owner	85.5	97.03	11.53
Over 5.0.....	2.7	0.7	—2.0				
TOTAL.....	100.0	100.0	.....		100.0	100.0	.....

Source: Derived from data provided by Ministry of Agriculture and Forestry, November 1948.

The Japanese Land Reform Program is distinguished from those programs of land tenure readjustment which have involved breakup of latifundia, or collectivization of smaller farms into a single grand unit under corporate management. There have been no collectivizing effects whatever. Maximum effects of breaking up single operating units have been confined to those units of more than three cho (12 in Hokkaido). Under the law, as we have seen, cultivating owners were permitted to retain up to this amount. Thus, in Kyushu, Shikoku, and Honshu the principal effect of subdivision due to land transfer would have been confined to about 335,000 cho.[38] Even so the change in *management* on these holdings would have affected only those units cultivated by owners in excess of three cho. The holdings of owners in this group which were rented to tenant cultivators would in most instances probably have been sold to the same tenants and management would, therefore, have been only slightly disturbed. On the island of Hokkaido, where large holdings are the rule, these effects might have been greater. However, on that island retention rates are higher, particularly in districts with more extensive agriculture.

We have emphasized the need for preserving stability of the cultivation pattern of Japanese agriculture. A principal difficulty in this respect is a tendency in Japan for farm units to shrink. This tendency has been accelerated by the war because the threat of starvation has caused almost every bit of available land to be put into cultivation, some of it quite temporarily. From a statistical viewpoint this increases the number of cultivators and decreases the average size of the unit under cultivation. In addition, stringent economic controls initiated during the war years have caused farmers to under-report the area actually operated. These factors have distorted land distribution data and made it impossible to isolate the affects on the cultivation pattern of the land reform program, particularly since some of these events occurred concurrently with the land reform operations. Table IV should be studied with the foregoing comments in mind. It shows the estimated

[38] *Japanese Agricultural Land Statistics, op. cit.*, p. 20, "Number of Farm Households and Areas by Scale of Management."

TABLE IV—ESTIMATED CHANGES IN SCALE OF CULTIVATION AND IN DISTRIBUTION OF CLASSES OF CULTIVATING HOUSEHOLDS DUE TO LAND REFORM AND OTHER CAUSES

A—Estimated Changes in Scale of Cultivation				B—Estimated Changes in Distribution of Classes of Cultivators			
Scale	Estimated % of Households			Class	Aug. 1, 1947	Dec. 31, 1948	Net Changes
(*Cho*)	1941–45	1946	1947				
0—0.5.....	33.6	39.2	41.4				
0.5—1.0.....	30.0	31.4	31.0	Owner-Farmer	36.5	70.0	33.5
1.0—2.0.....	26.8	23.5	21.8	Part-Owner	20.0	22.5	2.5
2.0—3.0.....	6.1	3.7	3.5	Part-Tenant	16.8	2.0	—14.8
3.0—5.0.....	2.2	1.4	1.3	Tenant	26.7	5.5	—21.2
Over 5.0.....	1.3	0.9	1.0				
TOTAL.....	100.0	100.0	100.0		100.0	100.0	.....

Source: Based on data supplied by the Ministry of Agriculture and Forestry, November 1948 and *Farm Tenancy in Japan*' op. cit., pages 48, 49.

cultivation scale for the past several years, and also the affects of the land transfer program among the various classes of cultivators.

Table IVA indicates a considerable increase in farms of the smallest size. Table III indicates the shifts which have occurred among classes of farm operators as a result of the land reform program. The proportion of owner-farmer families has greatly increased, and tenants and part-tenant families now make up a small minority of the farm operators. Important shifts from tenancy to ownership which the table shows are perhaps the most specific illustration of the impact of land reform on Japanese farm households.

Another factor affecting the management of land in Japan is the extreme dispersion and subdivision of farm units. Each individual farm is a collection of separate tracts and parcels scattered over a wide area. Paddy fields managed in holdings between 0.5 and 1.0 cho are subdivided on the average at the rate of 6.9 fields per cho. Upland fields are even more widely dispersed.[39]

The government has taken advantage of the opportunity afforded by current shifts in ownership to attempt a limited consolidation of scattered and dispersed farm holdings. These efforts have been impeded by (1) preference by owners and tenants alike to retain land which they habitually cultivate, (2) difficulties in matching lands as to quality and area, (3) interspersion of tracts subject to transfer among tracts not so affected, (4) the lack of specific enforcement authority which forced the government to depend on voluntary compliance with its consolidation policy. The achievements in consolidation are scattered and can be regarded only as a beginning. As yet, no significant overall attack on this problem has been attempted, although it must be faced if Japan is to have a more rational system of cultivation.

Conclusion

The Japanese Land Reform Program and the law on which it is based will continue as permanent functions of government. However, in the period from January 1, 1947, to December 31, 1948 a great deal has been accomplished toward establishing a modern and equitable land tenure system, for the most part without serious disturbance to agricultural operations.

This has been an undertaking of considerable magnitude. It has involved transfer within two years from tenancy to ownership of 27 million separate tracts of land with a total area of nearly 2 million cho—over one-third of all the agricultural land in Japan. A minimum of 2.7 million cultivators have acquired this land as owners.[40]

Execution of this program has called for combined efforts by 300,000 persons at national, prefectural, and local levels at a total administrative cost over a two-year period of over 6 billion yen.[41] The total price of the land purchased is approximately 11 billion yen.

About thirteen percent of the cultivated area remains in tenancy, a reduction of thirty-four percent in the two-year period. The conditions of tenancy for remaining tenants has been greatly altered. Cash payments have been substituted for payments in kind. Rentals are subject to maximum ceilings. All leases must be written and approved by Agri-

[39] *Agricultural Land Statistics, op. cit.*, p. 12.

[40] Cf., Table II and footnote.

[41] At the date on which this paper is written, January 10, 1949, Japan has no foreign exchange rate. For purposes of convenience of the Occupation Forces in Japan a rate of 270 yen to one U. S. dollar has been established. This information may be of some assistance for interpreting the magnitude of the administrative costs of the land reform program.

cultural Land Commissions which also have authority to regulate all important tenant-landlord relations.

The Japanese land reform program has given Japanese farmers a stake in the future of a democratic Japan. After a long struggle this large, traditionally-oppressed group of Japanese rural society has finally achieved a hold on land. It is not likely that this hold will be shaken or that the new owners will permit themselves to be dispossessed. This gain has been achieved peacefully and through democratic procedures and, moreover, without disturbance to the positive features of the farm economy. The emphatic response of the entire farm population to the opportunity of sharing in the operation of the program speaks well for the inherent capacity of Japanese farmers to govern themselves and to participate in national affairs.

Variables Commonly Ignored in Housing Demand Analysis

By SHERMAN J. MAISEL*

THE need for improvement in housing demand analysis is obvious to all interested in urban land economics and related fields. Important decisions must be made daily on both the national and local levels by businessmen as well as by all interested in public policy, but the factual basis for these decisions is woefully inadequate. This article suggests that considerable improvement might be made if greater use were made of certain simple economic tools as well as of the analytical writing already available in the housing field.

A great deal of knowledge, developed both in the field of demand analysis in general and of the housing market in particular, is omitted from the average housing demand study prepared currently on either the national or local level. All analytical writings stress the many variables which may affect demand.[1] Yet either most estimates and forecasts are based on only one or two variables and deal with only a small part of the actual situation and data or the assumptions upon which other variables are introduced and the manner in which they are treated are not clear and logical. As a result, possible and actual sources of error are numerous. Even so, since no other information is available, these documents are used as the basis of both study and action.

The purpose of this paper is to restate briefly in summary form certain parts of general demand theory and to show their applicability to analysis in the housing field. The doctrine stated is that found in most elementary texts. To show the need for applying this theory to housing, I select one variable largely neglected in recent housing demand studies and suggest how great its effect has been in the market in the past. It is hoped that the juxtaposition of the theory and the statistics will enhance the usefulness of each.

The variable chosen is income—an obvious choice since it is probably the most important as well as one of the most widely discussed factors. We shall see that income variations can change the rate of increase of new families seeking housing by as much as 100 per cent within a year. It can also, if fully effective, rapidly change the amounts spent by each individual family.

The fact that the effect of income can be so great is, of course, not surprising. It does seem worthwhile, however, to re-emphasize it because of past neglect in many statistical studies. It also serves as an indication of how far estimates may differ from reality if important variables are omitted. The use of current statistics supplies an additional advantage: when we have finished we find ourselves with an indication of what has happened to housing demand during this past decade.[2]

I

The Importance of a General Demand Function. Housing demand analysis is a

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[1] See, for example, the excellent discussion found in *Standards for Increasing Housing Needs*, Report, Special Committee to study Problems of American Small Business, U. S. Senate 79:2, print No. 8; also Panel III, "Measuring Effective Demand in the Housing Market," *Land Economics*, Supplement, February, 1949.

[2] Many of the points in this paper are necessarily made in an abbreviated form. For a much fuller treatment not limited as rigorously by space, see S. J. Maisel, *An Approach to the Problems of Analyzing Housing Demand* (unpublished thesis, Harvard, May 1948).

specific application of the general theory of demand. In such an application, the concept of a general demand function must be employed. The realization that the total amount of a product purchased depends upon many factors in addition to price has been one of the great developments of recent theory.

Modern demand doctrine has emphasized the great differences between the general demand function as used in this study and the simpler Marshall-Cournot statement of a price-quantity relationship.[3] The latter commonly assumes as constant such factors as the character and taste of consumers, their income, and the prices, type and quality of all other goods, whether competitive or complementary. A general demand function recognizes that all of these and many other factors may change and that the amount of housing demand may alter with any or all of them.[4] This total relationship—the effect of all possible variables—has to be considered if our studies are to be applicable to real situations. If estimates are to be the basis for action, as they are in most studies, they cannot consider only one or two market influences. *Ceteris paribus* must be recognized as a methodological aid which can seldom if ever be applied to analysis of reality.

Before such a function can be stated for the housing market, the total demand for housing or shelter must be clearly differentiated from the demand derived from it for construction of new or converted units. A basic demand exists for shelter—furnished in any period primarily by standing houses. If the original supply is not of sufficient quantity or quality, a demand for construction of additional facilities arises. The primary demand, however, and that dealt with in this article, is the shelter requirement.

The relationship between the demand for shelter and the demand for construction is extremely complicated and varies from period to period.[5] Each market is affected by considerations not entering the other. Even where the same variables affect both, since construction demand is a derived demand, their impacts may be of entirely different magnitudes. Variables causing small swings in shelter demand may cause wide swings in construction. The solution of certain types of problems may require an examination of both, while others may be solved by considering shelter or construction demand alone.

Contrary to many specific or implicit beliefs held by others, I can see no reason to assume that correspondence between changes in these demands is extremely high.[6] Increased shelter demand may be reflected to only a slight degree in the construction market. The increased demand for shelter may be offset by changes in the prices of existing units, in credit facilities, or in other factors familiar

[3] For a complete formulation, see H. Schultz, *The Theory and Measurement of Demand* (Chicago: University of Chicago Press, 1938); also A. R. Prest, "Some Experiments in Demand Analysis," *Review of Economics and Statistics*, February 1949. The present discussion follows the restatement found in that article. Also see C. F. Roos and V. von Szeliski, "Factors Governing Changes in Domestic Automobile Demand," *The Dynamics of Automobile Demand* (New York, General Motors, 1939), p. 25.

[4] See "Measuring Effective Demand in the Housing Market," *loc. cit.*, pp. 111-15. That paper discusses similar concepts without introducing the idea of a general demand function. As a result the author finds it necessary to shift his definition of "elasticity of demand" in the middle of the article and never arrives at a usable new concept.

[5] The housing or shelter market is that "in which the services of residential land and improvements are bought, sold and exchanged." ("Measuring Effective Demand in the Housing Market," *loc. cit.*, p. 103). Construction is the erection or alteration of structures.

[6] See D. Rosenbaum, "The Housing Needs of the Nonwhite Population in Non-farm Areas," *Land Economics*, November 1948. I can see little point in discussing the demand for construction in particular price ranges or for particular racial groups based upon data drawn from the shelter market unless the type of relationship existing between these two markets is shown. In extreme cases, increased shelter demands can be and have been met entirely without construction. Studies of construction must consider all variables affecting construction demand. Changes in shelter requirements are only one of the many variables which may be important.

from our recent history. It is certainly unlikely that the demand for construction can be found simply by subtracting the existing supply from a shelter demand schedule.

A General Demand Function for Housing. What does the demand for shelter look like? It is two-dimensional, including requirements for both a certain quantity or number of dwelling units and for differing utilities or values in each. Both dimensions must be considered in all demand studies. They are commonly indicated by dividing the total number of dwelling units required in an area into rental or value classes similar to the tables of a housing census.[7] The differentiation into classes is supposed to reflect actual differences in utilities for which the consumer is willing to pay additional sums.

The general demand function for housing relates the total number of units demanded and the value of each to all the forces which determine the housing schedule. For the purpose of analysis the problem can be divided into its two dimensions, with each considered separately, although identical factors may influence both. We consider in turn (a) those factors which determine the total number of units demanded, and (b) the determinants of the value distribution of these units. A change in one of the variables determining "a"—the total number of units demanded—would increase the number in each price class, but their relative distribution would remain constant. On the other hand, a change in one of the variables determining "b" would move units from one class to another, but the total would remain constant. If the same variable affected both, the total number of units would be altered as would their distribution.

The Determinants of the Total Number of Dwelling Units Demanded. Demand analysis must ascertain the number of families who desire to purchase or rent separate dwellings at various price levels.[8] This number depends upon social, physical and economic forces. At any time, an area has a certain population with a particular age distribution. The shelter demand of this given population varies greatly in accordance with changes in economic variables. The first problem of demand estimates is to find the manner in which this variation occurs.

What are some of the forces which affect the number of houses demanded? (1) We have already mentioned the amount and distribution of income per family. We delay until the next section any further detailed discussion of income since we use it as an example of what must be added to housing analysis. (2) Many people stress price as an important factor. We frequently see statements as to the large increase in demand which would occur if housing prices could be lowered sufficiently. How this process would work is frequently not clear. There are many costs involved in establishing a separate family, of which rent is only one. As a result, price changes lose a good deal of leverage. If, for example, rent were one-third of the cost of establishing a new family, then for every 3-percent drop in housing prices there would be only a 1-percent drop in the total cost.[9] (3) Just as prices may be a

[7] For a complete theoretical discussion of this point, see H. W. Robinson, *The Economics of Building* (London: Staples Press, Ltd., 1939), Ch. IV, and H. W. Robinson, "A Note on Unoccupied Houses," *Review of Economic Studies*, June 1939, pp. 209-14; also "Measuring Effective Demand in the Housing Market," *loc. cit.*

[8] The definition of a family is one of the most complicated in the whole field of housing statistics. This article defines a family as an individual or group who would demand a separate dwelling unit at a given price level. This definition would coincide with that of the 1940 census in normal periods. In periods of extreme shortage, however, it would exceed the census total by the number of families actively seeking but unable to find houses at normal rents. Throughout this paper the term family is used in this sense.

[9] Most statements implying great price elasticity in the housing market would seem to be based upon a concept of

(*Footnote 9 continued on page 268*)

determinant of demand, so may available credit facilities. The somewhat similar effects of changing credit terms or cutting capital costs are familiar.

Other variables also may be found which are important. To express these and all other forces a completely generalized statement of the total demand for shelter may be drawn up as follows:

$$F = f(P, Q, C, i, Z)$$

where F stands for the total number of housing families, P for the physical population, Q = real income, C = cost, i = credit, and Z = all other non-expressed variables. This statement is, of course, purely schematic for analytical purposes. The fitting of data and of a particular function to any housing market is an extremely complicated task.

The Determinants of the Value Levels of Housing Demand. While an understanding of the factors influencing the number of families in the housing market is valuable, most demand analyses also require knowledge as to the amount each family will be willing or can afford to pay for its shelter. This requires an estimate of the quantity of housing utilities each family will demand. It should be recognized that when price classes are introduced into housing demand analysis each monetary figure simply represents a certain quantity of utilities or values.

Just as in the case with the number of families, the value distribution of housing demand may depend upon innumerable factors as shown in the following equation:

$$q = f(Q, P_1, P_2, \ldots\ldots P_n / Z)$$

where q is housing demand, Q is real income, P_1 is the cost of houses, P_2 . . . . . P_n are the prices of all other goods, and Z represents all other possible variables.

To illustrate the way in which these variables might influence shelter demand we can construct a simple indifference or consumer's preference table for a typical family.[10] In Figure 1 we plot a

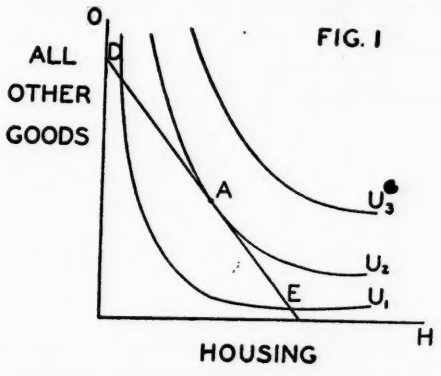


FIG. 1

Curves labeled U_1, U_2, U_3 represent indifference curves relating housing utilities to all other goods. The line DE is the consumption possibility curve indicating all possible divisions of income between housing and other expenditures. The point A shows the actual equilibrium and the amount spent on housing and for other purposes.

family's indifference curve relating housing to all other expenditure or saving possibilities. The price line for housing and all other goods based upon the particular income of the period is drawn in. An equilibrium point, A, indicates the amount of shelter the family would buy in comparison with all other goods, as well as the family's total expenditures on shelter. This is the same as the rent actually paid in the market.

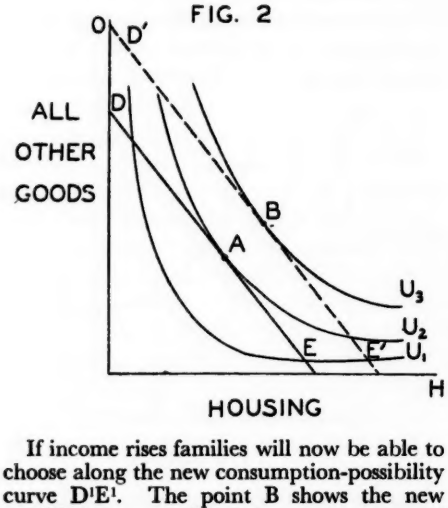
What factors might alter the amount paid for shelter? A new equilibrium might be reached because of (a) changes

(*Footnote 9 continued from page 262*)
filtration and replacing old units by new construction. This is a good example of a failure to differentiate between the shelter and construction markets. Whether the latter is actually price-elastic depends, of course, on what happens to the existing supply.

[10] For a clear explanation of the concepts employed, see the introductory text, P. A. Samuelson, *Economics: An Introductory Analysis* (New York: McGraw-Hill, 1948), pp. 487-90.

in the relative prices of housing and other goods, (b) changes in the family's income, or (c) changes in the family's desire for housing compared to other goods. For example, Figure 2 demonstrates a new

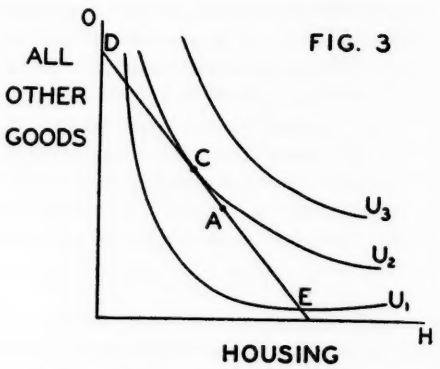
FIG. 2



If income rises families will now be able to choose along the new consumption-possibility curve D'E'. The point B shows the new equilibrium as well as the new amount of housing purchased and rental expenditures.

equilibrium point reached as a result of income changes, all other things remaining constant. Since housing is a normal good, there is an increased expenditure. In Figure 3, on the other hand, a new equilibrium point is reached because of a change in the indifference curves due to improved utilities of other goods. For example, improvements in the automobile might have lowered the amount families were willing to spend on housing, even with the same income and same relative prices. Contrariwise, if television is a complementary good to housing, we might find that since the introduction of television the demand for housing has increased. Both the general demand function and the indifference map show the same information—how particular variables affect the value of dwelling units demanded.

FIG. 3



While the consumption possibility curve, DE, has remained constant indicating no changes in prices or incomes, all the indifference curves have changed because of increased desires for non-housing goods. At the new equilibrium, point C, expenditures for housing are less than at A.

To obtain a complete statement of housing demand, the functions for both the total number of units and their distribution must be combined. In this combination many variables appear important. Some will affect the number of families in the housing market; some will affect the amount each family will spend; and some will affect both. In other words, we have a general housing demand function of the following type:

$$D = f(Q,\ P_1,\ P_2,\ \ldots\ P_n,\ C,\ i\ /Z),$$

where D expresses both the total number of units demanded and the value of each; and the other variables are as shown previously. D takes the form of a table showing the total number of dwellings demanded divided into rent or value classes. When a demand determinant shifts, either the total may change or the total may remain static with the number in each value class altered.

Although many variables may be explicitly excluded because of their unimportance, or for other reasons, an analy-

sis of housing demand should not simply ignore any of the determinants. If any are ignored, such implicit reasoning may determine the final results before the study is even begun.

II

The preceding emphasis on the content of a general demand function for housing may seem to many a needless repetition of what instinctively is familiar. We all feel that when we speak of housing demand it is in this broad sense. Unfortunately, however, this is not the case in most published analyses. Although issued as a basis for policy, they habitually omit important variables. This section demonstrates by specific numerical and historical examples how omission invalidates their results.

This exposition is concerned with the income variable, not only because it has the best data but also because of its importance in the market. Most discussions of housing demand and analysis of the housing market place great stress on income fluctuations.[11] Income changes are cited as one of the primary factors causing instability. However, in the transition from theory to practice the use of income analysis falls by the wayside. Income as a variable is primarily conspicious because of its absence from recent studies of the housing market.[12]

As an example, everyone interested in housing is familiar with the many forecasts of future demands or needs made in the past several years. There is almost complete uniformity in each study's estimates of the number of families needing shelter because each neglects all but physical-demographic variables. The Housing and Home Finance Agency summarizes these studies with the following statement:

> On the matter of demand resulting from new family formations there is but little disagreement among the various analysts. In the main, the Census Bureau figures are accepted with only minor adjustments.[13]

By accepting the census figures, the authors of these studies include only indirectly—and then in an illogical manner—the effects of economic changes on family formation. The census figures project movements which occurred between 1930 and 1940.[14] During this period, per-family real income fell about 10 percent, and during most of it income was at a low level.[15] By failing to adjust for economic factors, the forecasters in effect project a similar decline in income and economic activity for the period 1940 to 1955 or 1960. The following discussion shows how great the effect of leaving out the influence of income may be.

How High Incomes Affect Housing Demand. The manner in which income changes exert their influence is clear.

1. The total number of families demanding housing rises with incomes. It increases in periods of prosperity because marriages take place sooner, because those previously living together can pay for more space and privacy and so split into several housing families, and because immigration and rural-to-urban migration proceed at an accelerated pace.

[11] For example, see C. D. Long, *Building Cycles and the Theory of Investment* (Princeton: Princeton University Press, 1940), pp. 38-45; M. L. Colean, *American Housing* (New York: Twentieth Century Fund, 1947), p. 194; L. J. Chawner, "The Residential Building Process," *Housing—The Continuing Problem* (National Resources Planning Board: 1940), pp. 22-3.

[12] This statement obviously does not apply to econometric models of construction demand, for here income is usually shown as one of the most important variables.

[13] U. S. Housing and Home Finance Agency, *The Housing Situation—The Factual Background* (Washington: 1948), App. B, p. 2. The estimates summarized in this study include the following: The Joint Committee on Housing; National Public Housing Conference; Houser and Jaffe; Newcomb and Kyle; Twentieth Century Fund; Abrams; NHA, and various others presented at previous Congressional hearings.

[14] U. S. Bureau of the Census, *Population—Special Reports*, Series P-46, No. 4, p. 2.

[15] See J. F. Dewhurst, *America's Needs and Resources* (New York: Twentieth Century Fund, 1947), p. 39; App. 4.

2. If all other things remained equal, this increase in families would simply increase the number of houses demanded in each price range. However, because of this same income change, every family will find itself on a higher preference level and so each will spend more for housing also. There will be a general upward shift in the whole demand schedule.

Changes in the Number of Units Demanded Resulting from Income Shifts. Table I shows the shifts in the number of non-farm housing families resulting from income changes in past periods of fluctuation. It indicates that, if history repeats itself, the number of dwelling units demanded might vary by more than 750,000 from normal in a single year and might over a decade have an average variation of as much as 300,000 units annually.

Most housing studies, as was indicated previously, use the census estimates of the change in the number of households as the basis of their predictions of increased demand. Comparing previous fluctuations as shown in Table I with the census estimates of a normal increase in families of about 560,000 per year, we find that economic changes might cause the actual situation to differ from the estimates by over 100 per cent in a single year and by over 50 per cent for the whole period.

TABLE I—Income Elasticity of Family Formation
(000)

Cause	Maximum Income Effect for Decade*		Maximum Income Effect for Single Year*	
	From	*To*	*From*	*To*
Variations in marriages	+1,500	−400	+300	−280
Ratio independent familes	+1,000	−1,000	+250	−250
Farm migration & immigration	+600	−600	+220	−220
Total	+3,100	−2,000	+770	−750

* The number of families above the normal level formed as a result of high incomes or which failed to be formed because of depression.

Sources: Discussion below, based on period 1930-1948.

That this is not purely an academic possibility is shown by our recent history. In 1942 the demand for non-farm housing increased at about twice the estimated rate.[16] For the period 1940-47, the actual increase in the number of families in the urban housing market was about 50 per cent higher than estimates based upon the continuation of the 1930-40 trend. Almost the whole of this increase can be attributed to changed economic conditions.[17] Obviously, the reliability of all studies which omit the effect of this variable from their forecasts is not great.

The following discussion explains how income changes alter the number of families in the housing market. At the same time it furnishes the basic data for Table I.

Demand Shifts Resulting from Changing Marriage Rates. The fact that marriages and divorces fluctuate with income has long been common knowledge. The actual correlation between marriages and business activity is very high.[18] An examination of past records shows that even the recession of 1937-38 is clearly visible in the marriage rate. The effect has been so great that in 1932 over 280,000 families less than normal were formed. In 1941 and 1942 an excess of over 300,000 per year were formed, and in 1946 the additional number was over 900,000 (part of

[16] Census, *Population—Special Reports*, Series P-46, No. 4, Table 3; and B. A. E., *Farm Population Estimates 1940-46*, Table 3.

[17] The estimate cannot be exact because the number of families in the housing market exceeded the number enumerated. The difference is those families who would have undoubled if a house had been available. See references in previous footnote; also NHA, *Housing Needs* (Bulletin No. 1), pp. 8-9, and Joint Committee on Housing, 80:1, Hearings, *Study and Investigation of Housing*, p. 4732.

[18] V. C. Galbraith and D. S. Thomas, "Birth Rates and Cycles," *Journal American Statistical Association*, December 1941, pp. 465-6, 472.

which should be attributed directly to the war).[19]

Since the number of houses demanded by married couples is greater than the number that would be demanded by the same number of single persons, this increase in marriages means an increase in housing demand. In the present decade this has meant almost 1,500,000 more families than normal, even taking into account the unusual divorce rate; while, at the opposite extreme, in the 1930's the deficit was over 400,000.[20]

Sharing of Space (the Ratio of Actual to Potential Families.) Income also influences housing demand by helping to determine how many families will share homes instead of entering the housing market. This is sometimes treated in demand studies under the heading of "doubled" families. However, the total influence of income on the ratio of actual to potential families far exceeds variations in "doubled" families as estimated by the census or similar sources.

Little relationship exists between normal families (husband-wife with or without children) and housing families. In 1940, for example, 25 per cent of the houses were occupied by broken families, single persons, or other atypical groups.

In an interesting article in this journal, Blumenfeld indicated roughly the theoretical maximum of families.[21] Houses might be required for every married couple, every widowed, divorced, or separated person, and every single person over 25 years of age. Based on this definition, a possible potential demand increase of nearly 45 per cent exists.

Why does this large population stay doubled up? Partly for social reasons; for economic ones; and, in our present unusual situation, partly because of a shortage of available houses. Some sharing of homes is natural and is an established part of American mores. Traditionally, young couples start out their married lives with their in-laws and establish their own families only when children arrive or their earning ability increases.[22] Likewise, because of health, accidents, age, or other reasons, parents frequently move in with their children even though they may be financially able to support separate households.[23] Single individuals and broken families may also choose to live with others. The fact that a person is an adult is no guarantee that he desires to become head of a household.

However, economic conditions heavily influence the size of this group and the amount of sharing. When incomes rise a larger number become actual families demanding houses instead of merely potential ones. Studies of undoubling must include not only the married couples traditionally considered, but also single individuals and broken families. For example, even though the percentage of dwelling units they occupied was less in 1948 than it was in 1940, the presence of this unmarried group in the market is frequently cited as one of the reasons for the present housing shortage.[24]

Estimating shifts in demand due to sharing is difficult since no large-scale

[19] Census, *Population*, Series PM-1, No. 3, Nov. 12, 1944, and Joint Committee on Housing, Hearings, *op. cit.*, p. 4732.

[20] See preceding footnote for references. The number of families which would have been formed by single individuals must be subtracted from increased families resulting from marriages.

[21] Hans Blumenfeld, "A Neglected Factor in Estimating Housing Demand," *The Journal of Land & Public Utility Economics*, August 1944. For a somewhat similar account, see A. Block, *Estimating Housing Needs* (London: Architectural Press, 1946), which, however, approaches this problem primarily as a physical matter.

[22] The 1940 Census indicates that more than 20 per cent of couples did not establish separate living quarters until more than a year after marriage. As a corollary, sharing houses is highly correlated with age. See U. S. Census Bureau, *Population—Special Reports*, Series P-46, No. 4, p. 4; and P. C. Glick, "The Family Cycle," *American Sociological Review*, April 1947.

[23] L. Bloomberg, "Undoubling of Families and the Demand for Housing Units," *Journal of Land & Public Utility Economics*, February 1936, pp. 80-83.

[24] U. S. Bureau of the Census, *Current Population Reports—Population Characteristics*, Series P-20, No. 21, Table 2.

surveys have been made as to the reasons why sharing occurs. Certain studies, however, indicate that the number of normal families sharing space as a result of economic pressure has risen and fallen by over 500,000 within a few years.[25] To this total must be added the number of families without a husband and wife which enter and leave the market.

Since non-normal families are more subject to economic pressure than normal groups, it would seem conservative to estimate the actual increase or decrease in the number of families sharing space as twice that of husband-wife units. This would mean that income—drawing on this source of potential families—has created or destroyed the demand for a million dwelling units in comparatively short periods.

Migration and Immigration. All students of American cities are familiar with the important part that migration has played in their growth. In 1930 only three American cities of over 100,000 were reproducing at a rapid enough rate to maintain their size. This is not a recent development; throughout our history urban areas have grown primarily by inward movements of population.

Migration has taken place both from within the nation and from outside its borders, with the relative importance of each varying greatly. From 1900 to 1930 about one-third of the increase in population came through immigration.[26] But in the decade of the thirties there was a net emigration from the United States. While immigration became less important, rural-urban migration accounted for an annual increase of about 185,000 in non-farm housing demand during the twenties and an additional 110,000 per year during the thirties.[27]

To appreciate fully the importance of migration it must be recognized that it is a fundamental factor in our economy, not an unusual condition existing in certain years and disappearing in others. It is based on three urgent forces:

(1) Migration is necessary because of the differential fertility between urban and rural areas which gives an excess of growth on the farms and a deficit in the cities. About 122,000 additional houses per year would have been demanded in urban areas simply to house the number of migrants required to leave the farms if the farm labor force is not to be larger in 1950 than in 1940. In 1930 the reproduction rate among native white women on farms was 1.69 compared to .86 for the urban population. If migration did not take place the farm population would increase about 60 percent within one generation, actually doubling in the poorest areas in 25 to 30 years. On the other hand, if past trends had continued and no migration had taken place the urban population would have reached its peak in 1945 and would be declining.[28]

(2) Even more important than differential fertility in forcing migration have been improvements in agricultural technology. The percentage of labor employed on farms has been decreasing steadily for decades.[29]

(3) Finally, migration is necessary to correct maldistributions of populations as compared to income. While vast strides have been made in equalization of opportunities, large income divergences still

[25] U. S. Bureau of the Census, *Population—Special Reports*, Series P-46, No. 4, p. 5; National Resources Planning Board, *Housing—The Continuing Problem*, *op. cit.*, p. 22.

[26] J. F. Dewhurst, *op. cit.*, p. 32.

[27] The statistics for rural-urban migration are based upon individuals, not families. See U. S. Bureau of Agricultural Economics, *Farm Population Estimates 1910-46*(Washington: June 1946). These have been converted to families on a 3.4 to 1 basis. This ratio was derived from a study of census data on migrants from farms. See S. J. Maisel, *op. cit.*, pp. 199-203.

[28] For a discussion of these points as well as pertinent data, see National Resources Committee, *The Problems of a Changing Population* (Washington: 1938), pp. 116, 138.

[29] See T. W. Schultz, *Agriculture in an Unstable Economy* (New York: McGraw-Hill, 1945), p. 86, Ch. III.

exist which act to insure rural-urban migration.[30]

Since clear reasons for migration exist, the real problem is to find out why movements to the city are intermittent. Why does not this pressure cause a constant flow? Why have as many as 360,000 families migrated in some years, while in 1932 there was an actual net movement back to rural areas of 100,000 families? The answer is again economic conditions.

The most important element determining timing of migration is employment opportunities in urban areas. The pressure to move from rural areas is constant, but it is effective only when jobs are available in the cities. Migration becomes much greater in prosperous years, and even short depressions such as those of 1924, 1927, 1937 affect the movements. The Bureau of Agricultural Economics has in fact estimated farm population from non-agricultural employment levels with rather good results.[31]

This tendency for the farms to hold surplus labor until the cities can absorb it thus becomes an important factor in influencing urban housing demand. As a result of income fluctuations, the number of houses required to house farm migrants can vary as much as 200,000 a year on either side of normal. In the course of a decade some of the extremes would be ironed out, but average annual variations of 50,000 in either direction could still occur.

The effect of income shifts on immigration is harder to measure since the pressure works through social and institutional factors rather than through the market. Immigration into the United States depends upon legal quotas and administrative decisions in their application. Both are influenced by economic conditions so that more immigrants are allowed to enter in times of prosperity than in depression. In addition, during the depression emigration increased greatly.

It seems reasonable to assume that economic influences on net immigration could cause housing demand to vary by as much as 20,000 per year in either direction from the figure shown in the census family estimates. Over a decade the annual average might be half this amount. This estimate is lower than the actual error attributable to this factor so far in this decade.[32]

The variations in rural-urban migration and in immigration can be added to assay their net effect on housing demand. Apparently, income shifts, through their total influence on migration, may cause the number of non-farm families demanding houses to vary by as much as 220,000 in one year or 600,000 in the course of a decade.

All of the factors considered in this section are added together in Table I to show the total income effect on housing demand. As stated, income shifts might, if history repeats itself, cause the total number of families demanding shelter to vary by over 100 percent from normal in a single year.

Variations in the Value Distribution Due to Income Fluctuations. In addition to changing the number of families in the housing market, income movements will affect the amount each family will spend. As a result, the whole demand schedule will shift. After an income change, the type and value of all units demanded will differ from the previous period. Obviously this type of change must be considered in analysis. As an example, the following paragraphs indicate that the

[30] National Resources Committee, *Problems of a Changing Population, op. cit.*, pp. 9, 113.

[31] See T. Schultz, *op. cit.*, p. 100. Chapter IV of Schultz's book discusses the effect of changing incomes on these movements at considerable length.

[32] U. S. Bureau of the Census, *Forecasts of the Population of the United States 1945-75*, pp. 35-37.

income-effect on the value distribution of housing demand as contrasted to its effect on the number in the market may have increased the value of average demand by over 50 percent.

Over most periods the effect of income shifts cannot be completely isolated because all other variables are changing at the same time. However, by using actual income variations and certain assumptions as described below, the approximate magnitude of its influence can be judged. Its total effect may be greater than shown because of its influence on the level of other housing demand variables. The following example considers only income's primary and not its secondary or higher order effects.

In order to estimate the influence of income changes, two types of information are required: (a) knowledge of the income level and distribution at particular times, and (b) a matrix or schedule showing the rents that each family pays at every income level. With certain qualifications, both types of information are available for the housing market.

The Census Bureau has been gathering income information since the 1940 census. To date, distributions of nonfarm families into income groups have been published for the years 1939, 1944, 1945, 1946, and 1947. Unfortunately, however, the information collected and the definition of families have not remained identical. Consequently the basic data must be adjusted to gain comparable information for the year 1939 and later years.[33]

In addition to the census income distributions it is possible to derive schedules for other years by making certain assumptions as to the manner in which changes in the national income totals have been distributed among classes.[34] Comparison of estimated distributions obtained by use of these methods to actually enumerated ones indicates that, while certain errors exist, the use of estimated distributions for housing market analysis is feasible.

Less information is available to form matrixes relating rents to income. Many studies of this type exist but few have general applicability. In addition most have reported average rent-income relationships rather than the distribution within classes, and this reduces their usefulness. The principal matrixes that might be used are those of the U. S. Census Bureau. Again, however, a problem of incompleteness arises. In surveys since 1940, reports on rental payments include only rented homes and exclude owner-occupied units. In the 1940 census, where rents or imputed rents for all units were reported, the income distribution was not exact. However, even though lacking exactitude, the 1940 census data appear satisfactory for use. Since the data account fully for all dwelling units, both rented and owner-occupied, in the base year, minor errors in the income distribution would not seriously change analysis.[35]

If the amount that families in each income-class paid for rent remained constant between 1939 and 1947, how much would the rise in incomes increase housing demand? The following discussion shows how the answer to this question can be obtained. Average (median) demand would have risen about 50 percent

[33] U. S. Bureau of the Census, *Current Population Reports—Consumer Income*, Series P-60.

[34] See D. Durand, "A Simple Method for Estimating the Size Distribution of a Given Aggregate Income," *Review of Economics and Statistics*, November 1943; also J. Tobin, *A Theoretical and Statistical Analysis of Consumer Saving*, unpublished thesis (Harvard University, 1947).

[35] The particular matrix used is that derived by the National Housing Agency. See *General Housing Act of 1945*, Hearings, Committee on Banking & Currency, U. S. Senate 79:1, p. 56. The rent classes are exact, as is the relationship of rents to non-wage incomes. Errors could arise in placing families with non-wage income. However, unless these errors were very large they would not affect the results in this study.

between these years as the result of higher incomes. In other words, abstracting the result of income shifts from all other variables, we would have expected this factor alone to have raised the value of the average house demanded in 1947 and the total of per-family rents and imputed rents by 50 percent. The following shows in addition how this increased income demand would have been distributed among each price class.

How Do We Find the Influence of Income Shifts? Table II lists the income distribution of all families in 1939. It also contains the percentage distribution of all families in each income class by the amount paid for rent as actually reported in the 1940 census. This is a rent-income matrix, as previously discussed. To isolate the effect of income shifts on housing demand we hold this rent-income matrix constant while allowing the income distribution to change. By this process we assume in effect that, on the average, each family will behave in its new income-class as families previously falling into that class did. This, of course, would not be expected to occur exactly.

The factors influencing the amount families of particular income groups would pay in rent would vary over time. Changes in any other variable of the general demand function—for example, prices or tastes—would cause alterations in the rent-income relationship. Obviously, since all must be considered in a complete demand analysis, the income-effect alone may not give any more complete results than any consideration of some other effect separately. This must be clearly understood. Even though analysis may be greatly improved by introducing the effect of income changes, since it is the most important variable, complete results can be obtained only by taking into account the influences of all other demand determinants as well.

The effect on housing demand of a change in the amount and distribution of income is shown in Table III. In this table, the income distribution for 1947 has been multiplied by the 1939 rent-

TABLE II—PERCENTAGE DISTRIBUTION OF FAMILIES IN EACH INCOME CLASS INTO MONTHLY RENT GROUPS—1940 CENSUS

Income Classes	Percentage of families in each income class	CONTRACT OR ESTIMATED MONTHLY RENT							
		Total %	Under $10	$10–19	$20–29	$30–39	$40–49	$50–74	$75 & over
$ 1–499.....	13.9	100	47	29	12	6	3	3	....
500–999.....	16.9	100	29	35	20	9	4	2	1
1000–1499.....	17.5	100	16	34	27	13	5	4	1
1500–1999.....	15.3	100	8	27	31	20	8	5	1
2000–2999.....	20.2	100	4	16	27	25	15	10	3
3000–4999.....	12.1	100	....	9	19	24	19	21	8
5000 & over...	4.1	100	....	...	9	13	13	30	35
Total.....	100								
Percentage Distribution....		100	16	24	23	16	9	8	4

Source: *General Housing Act of 1945*, Hearings, Committee on Banking & Currency, U. S. Senate 79:1, p. 56. Figures rounded.

income matrix.[36] The table shows what the level of demand would have been in 1947 if the income rise were fully effective and the influence of all other variables were neutral. The comparison of the 1947 schedule to the 1939 schedule indicates the effect on housing demand of the income shift during our recent history. The rise in demand is considerably less proportionately than the increase in income. This is explained by the well-known Schwabe's Law of Rent, which points out that as incomes increase families spend larger actual amounts but a smaller percentage of their incomes on rent.[37]

Even if all other factors remained constant, Table III shows striking contrast between the demand at 1947 income levels and that of 1940. This emphasizes strongly a fact often neglected in discussions of the housing problem, namely: An income rise or a greater equalization of the distribution of income means that people can afford a higher standard of housing. Possibilities of better housing are not limited to a fall in price, as many studies seem to imply.[38]

Using this approach, with similar basic information, the influence of income changes between any two periods may be isolated. When this has been done, the effects of other variables on demand can be analyzed. For example, in this way a clearer understanding of the importance of price changes or of the introduction of other goods into the market may be obtained. Unless income is removed analysis of other variables is most difficult since

[36] This method is similar to that used in National Housing Agency, *Housing Needs* (Bulletin No. 1), pp. 12-13.

[37] H. W. Singer, "Income and Rent," *Review of Economic Studies*, February 1937, p. 145. It should be noted that, because monetary income rather than real income corrected for price changes is used, the increased demand will be somewhat smaller than if the opposite method were employed. The difference depends on the shape of the rent-income matrix. The same method can be used to estimate the effect of an increase in either real or monetary income. For a discussion of this point, see Maisel, *op. cit.*, p. 235; also "Measuring Effective Demand in the Housing Market," *op. cit.*, p. 109.

[38] The reader familiar with the literature of housing demand will recall many other cases where current problems have been treated but the effect of income shifts has been neglected. This is especially true in the attempts to discuss the "filtration" process statistically.

TABLE III—PERCENTAGE DISTRIBUTION 1947 NON-FARM DEMAND: ASSUMING 1947 INCOME DISTRIBUTION AND SAME RELATION OF INCOME TO RENT AS 1939

Income Classes	Percentage Distribution All Families		1947 DISTRIBUTION OF FAMILIES IN EACH INCOME CLASS INTO MONTHLY RENT GROUPS: PER 10,000 FAMILIES							
	1939	1947	Total	Under $10	$10–19	$20–29	$30–39	$40–49	$50–74	$75 & over
$ 1–499....	13.9	2.7	270	127	79	32	16	8	8	....
500–999....	16.9	4.9	490	142	171	98	44	20	10	5
1000–1499....	17.5	6.6	660	105	224	178	86	35	26	6
1500–1999....	15.3	8.1	810	65	218	251	162	65	41	8
2000–2999....	20.2	22.8	2280	91	365	615	570	342	228	69
3000–4999....	12.1	34.5	3450	....	310	655	829	655	725	276
5000 & over..	4.1	20.4	2040	....	...	183	265	265	613	714
Total.....	100.0	100.0	10000	530	1367	2012	1972	1390	1651	1078
1947 Percentage Distribution			100	5.3	13.7	20.1	19.7	13.9	16.5	10.8

Sources: 1939 distribution and rent-income matrix from Table II. 1947 Income Distribution is based on Census *Current Population Reports—Consumer Income*, Series P-60, No. 5. Table 1. All non-farm families. This excludes single-person households, but includes secondary families.

many changes in prices and quantities are due to the variations in incomes.

Total Effect of Income Shifts, 1940-1947. By combining the effect of income on both the number of families and the amount they can spend, we obtain some insight into what has been happening in the housing market during the past decade. It must be recognized, however, that because other variables have altered during this same period, changes in demand due to income shifts do not give a complete picture of actuality.

Where have all the families in the present non-farm housing market come from? The 1947 Sample Census estimated that there were 32,500,000 non-farm census families on April 1, 1947. In addition, I estimate that on this same date there were 1,900,000 additional housing families who were not enumerated by the census since they were not able to find separate dwelling units of their own.[39] This means, then, that about 6,400,000 families entered the housing market between 1940 and 1947 whose presence must be explained.

This 6,400,000 is accounted for as follows: (a) A larger percentage of the total population in age groups who normally form households accounts for about 2,100,000 of the increase. (b) Next most important is the effect of incomes on sharing of space. Although the figure may be subject to a large error because based on estimates rather than actual enumeration it is believed that 1,500,000 additional families sought houses as a result of increased income levels. (c) Because more people married in each age group than in 1940, an additional 1,400,000 non-farm units were required. (d) A similar number of families, 1,400,000, were formed from those migrating to the cities—assuming that they formed families in the same ratio as those already living in urban areas.

Because many variables have changed it is impossible to attribute an exact percentage of this total increase to income fluctuations. However, the previous relationship of these individual items to income variations makes it appear likely that almost half of the increase in families during this period was due to high prosperity.

Table III has already shown the increase in the value of units demanded which would have occurred as a result of income shifts alone. The percentage breakdown shown in that table can be applied to the number of families in the housing market in 1947 to give an indication of the total effect of income changes. Table IV shows this combined estimate compared to the actual demand of all non-farm families in 1940.

TABLE IV—EFFECT OF INCOME SHIFTS ON THE VALUE DISTRIBUTION OF NON-FARM HOUSING DEMAND

Contract or Estimated Monthly Rent	Dwelling Units (in millions)		
	1940 Demand	1947 Demand*	Change
Under $10.....	4.4	1.8	−2.6
$10—19.....	6.8	4.7	−2.1
20—29.....	6.4	6.9	0.5
30—39.....	4.6	6.8	2.2
40—49.....	2.7	4.8	2.1
50—74.....	2.2	5.7	3.5
75 and over....	.9	3.7	2.8
Total.....	28.0	34.4	6.4

* Assuming total income rise effective and all other variables neutral.

Source: 1940 figures from *16th Census of the United States, Population and Housing*, "Families—Tenure and Rent," Table II. Non-reporting distributed in accordance with percentage reporting in each class and rounded. 1947 estimated from percent distribution by rent classes in Table III multiplied by estimated families in housing market.

[39] U. S. Bureau of the Census, *Current Population Reports—Population Characteristics*, Series P-20, No. 10, p. 9. The 1948 family estimates are now available, but the published population characteristics are not complete enough for analysis. The estimate for additional housing families is derived by considering 4 per cent as the number of normal families who would have been sharing dwelling units if the housing supply had been normal, and by assuming that the proportion of normal and of non-normal families who could not find separate space was identical. The number by this method would have been about 1,200,000 in April 1948.

This estimate, it must be recognized, is only a general approximation of income effect alone. In addition to these influences many other factors have tended to increase or offset part of this demand. Still this one force can account for a great many of the gyrations both in building and prices that have occurred in the housing market.

Conclusions

The preceding statistical examples make clear the importance of income as a variable in the housing market. The first section of this article showed that income was only one of many demand determinants. Obviously, if this and similar variables are ignored, much explanatory data will have been lost.

Housing analysis, estimates, and forecasts must not be satisfied with predicting the results of physical population growth and little else. If demand analysis is to serve a useful function it must carefully study and estimate the effect of all possible changes in the market. For this purpose the concept of a general demand function is extremely helpful. It calls attention to all the numerous factors which can change demand. By bringing out all the ramifications of demand it insures against attributing all changes in the market to movements in any single variable.

This study has indicated some of the effects of income changes on the market. In addition to further research along this line, data are needed on the effects of price movements, changing tastes, credit facilities, and similar influences on demand. Statistical data are currently being gathered. If the concept of a general demand function leads to a more intelligent planning of the requirements for analysis, the usefulness of these data and of the studies based upon them can be greatly improved. If analysts continue to ignore important variables, results will continue to be poor.

Relocating Negroes From Urban Slum Clearance Sites

By GEORGE B. NESBITT*

TITLE I of the Housing Act of 1949, called "Slum Clearance and Community Development and Redevelopment," provides maximums of one billion dollars in loans and a half-billion dollars in subsidy funds as federal aid for such purposes. Certainly one of the biggest and most immediate problems which the larger of the participant cities will face is that of the orderly resettlement, both temporarily and permanently, of the residents displaced from the slum clearance areas.

Some responsible officials of larger cities, in which the housing supplies continue tight, are inclined to trust to increases in the housing supply plus the filter process to soon enough render relocation manageable. Others are not as optimistic. There is, however, an element of the relocation burden which, wherever it exists, is isolated from the debate as to whether or not "waiting for vacancies" is wishful thinking. Negro-packed slum areas get little relief from normal additions to the supply of housing or from the filter process. That little comes too slowly and with too much uncertainty, notwithstanding *Shelley v. Kraemer*.[1] The toughest part of the difficulty is relocating these people and it will have to be tackled as is.

Conceivably, in some cities, consideration will be given to delaying, or even avoiding, clearance of areas that are Negro-inhabited. However, such decisions are unlikely. In scores of cities such as Washington, D. C., Cincinnati, St. Louis, Baltimore, Chicago, and Detroit the larger part of the areas to be cleared is Negro-inhabited. Since the Negro-occupied areas are usually the oldest sections of the city, strong natural advantages for residential use attend them. They are near lakes or rivers, have good elevations, etc. Moreover, they are close upon or in the central business districts. They are often "eyesores"[2] along the principal thoroughfares, offsetting the favorable impressions conveyed by the shiny, face-lifted business establishments or new public buildings which are short distances away. Most importantly, they have long since become too run-down for corrective measures short of clearance. They are in fact the very areas where most of the worst slum conditions are to be found. Consequently, they are usually high, if not highest on the redevelopment schedules.

Even those few large cities without extensive redevelopment plans are apt nevertheless to find themselves engaged in slum clearance as a preliminary to

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[1] On May 3, 1948, in two decisions, *Shelley v. Kraemer*, arising in Missouri, and *Hurd v. Hodge*, arising in the District of Columbia, the U. S. Supreme Court held that neither state nor federal courts can enforce race restrictive covenants. The rulings, of course, will neither end residential segregation nor readily open up existing housing supplies to additional Negro residence, except where appreciable additions to the over-all supply take place. Even the latter remote possibility is subject to the realities of various other devices designed to prevent Negro entry.

[2] In St. Louis, Missouri, where Negroes and other citizens challenge the city's choice of the initially-selected clearance area (96 percent occupied by Negroes) as not being the worst slum area in the city, the Citizens' Committee replied, "However, no more dramatic example may be found than these 54 blocks located in *the very center of our city*." It continues," . . . people going and coming from work through this district are offended by the state of decay they witness on all sides. Unfortunately, too, every visitor who arrives in our city by train is given a poor impression of St. Louis as he or she is transported immediately through such dismal districts."

public low-rent housing construction. Federally-aided housing of this kind, despite persistent claims to the contrary, is accepted as the practical answer to low-rent shelter needs. Whether slum clearance in that connection is the handmaiden of planned urban redevelopment or serves public low-rent housing's own purpose, and that of urban redevelopment only indirectly, the relocation problem must be faced.

The Prewar Experience

Before the war a number of the major localities in the North for the first time accomplished wholesale resettlement of low-incomed, slum-resident families, white and Negro. While the early federal PWA low-rent projects were not conditioned on local destruction of substandard housing, "local circumstances" nevertheless did cause slum clearance, and hence relocation, prior to the erection of public housing especially where the housing was to be open to Negro families. What happened was that this exploratory public low-rent housing effort chose the problem of relocating Negro families within racially-restricted housing supplies as less burdensome than the certain gauntlet of obstacles against vacant sites for developments open to Negroes. Subsequently, the United States Housing Authority, now known as the Public Housing Administration, embarked upon its public low-rent housing program, requiring the elimination of slum dwellings in equivalent number to the new dwellings provided. Under its constitutional duty of racial evenhandedness, though usually with separateness, there resulted further relocation experiences covering white and Negro families.

It is that prewar experience to which naturally and hopefully most cities will turn. Indeed the public housers are eager to accept the responsibility. They declare that, "the relocation of residents of the area to be redeveloped prior to redevelopment can only be done with the assistance of public housing officials."[3] In its February 1947 issue, under the title, "Urban Redevelopment—What to do About Displaced Site Families," NAHO's *Journal of Housing* described in detail the operations of a Tenant Relocation Bureau, an agency used by public housing[4] as the basic tool for the relocating of slum-resident families. That statement, however, significantly concluded:

> "The above were NAHO's 1939 recommendations on a relocation bureau. Because at that time there existed no thought of, or program for, anything other than a public housing program since there was, in short, no specific plan of large-scale urban redevelopment—the relocaton job was considered to be over and done with, once slum site families were stowed away in other areas of the city. In 1947, although NAHO certainly continues to recommend a relocation bureau operating along lines similar to those outlined above, it is convinced that the relocation job such a bureau performs must be in accordance with much improved standards as to where and when displaced families should move—not simply, as the Metropolitan relocation bureau so aptly put it, on an expedient basis whereby 'the basic ills of most urban low-rent housing will be merely shifted to a different location'."

It is our purpose here to treat the particular difficulties of relocating Negro slum resident families, assuming the "urban redevelopment" framework, especially in the larger Northern cities, where huge, intensely crowded, Negro-occupied slum areas are so often precisely the area earmarked for early clearance.

[3] From a summary of the answers to the question "What Are the Problems that Urban Redevlopment Poses for Public Housing?" Page 329, December 1948, NAHO's *Journal of Housing*.

[4] In 1944 and 1945 the Metropolitan Life Insurance Company's agent James Felt and Company, Inc., set up and operated Tenant Relocation Bureau, Inc., to clear the site for the famed Stuyvesant Town development.

Here too, and of all places, relocation must not take place "on an expedient basis, whereby 'the basic ills of most urban low-rent (or slum) housing will merely be transferred to a different location'." Unless the particular difficulties of the problem are met forthrightly, slum transplanting with certainty will take place, if redevelopment of such areas prove infeasible.

The Problem

Under the most favorable circumstances conceivable the relocation task is a formidable one. Even the assumption of a normal vacancy ratio represents considerable over-simplification. To say the least, it is viewing the problem from only one end of the scope. Tackle the job and it becomes necessary to look the other way, on the people who must be relocated.

The Stuyvesant Town report[5] pointed out that, "with 3,000 different families to be moved, there were 3,000 problems to be solved." Each family on the slum site presents a unique variation in the degree and character of old neighborhood attachment, new location choice, and housing needs determined by family size, composition, and housing taste. The slum residents must seek only that shelter fitting their incomes even though ample vacancies may appear to be available throughout the whole market. The basic need characteristics of the family will appear in extremes—families almost inextricably rooted to the site itself; with highly specific and even single new location desires; those with "too many children," if not the remaining grandparents, too; and those dependent upon the various kinds of public aid. There also will be an infusion of delinquents. Certain to be present, moreover, with their special housing requirements and problems, are the disabled of all kinds. And there will be found those not so much attached to the slums in pure sentimentality as economically—small property owners, retailers and rooming house operators, and perhaps the keepers of "shady" establishments.

[5] Rosamond G. Roberts, *Three Thousand Families Move to Make Way for Stuyvesant Town*, p. 11.

Its Racial Aspects

Given a slum site predominantly or totally occupied by Negroes, however, and those complications are intensified at once. The generally lower income of Negroes, plus limited access to institutions for the aged, blind and ill among them will make for a larger lump of the disabled.

The presence of delinquents is the more likely because of the tendency of law enforcement agencies to view without alarm the locality's colored miscreants when they are "among their own." Despite lower incomes, the Negro site residents will likely include larger numbers of persons locally ineligible for public housing, such as single persons, couples without children, and families with insufficient residence in the locality. Among Negroes too location choice will vary. At one extreme there will be stronger preferences for "the neighborhood, "more out of fear to attempt residence elsewhere than desire to remain in the blighted areas. At the other extremity will be families viewing relocation as a chance to obtain better shelter elsewhere, perhaps to altogether escape the racial ghetto.

Such were the qualitative racial differences in site-occupancy characteristics generally dealt with in total or highly predominant Negro relocation before the war. What is more certain is that the race factor markedly increased the magnitude of the prewar relocation effort. Greater crowding of Negro-occupied

slum areas is a notorious fact.[6] The residential segregation which produced the near-total or total Negro slum in the first place simply meant moving more people off the site, with less places available in which to relocate them. The obvious difficulty of such a task and the fact of its accomplishment together suggest that here and there the extraordinary difficulties of Negro relocation must have been met with extraordinary procedures. At least some evidence is available.

Back in 1935 the Metropolitan Housing Council of Chicago issued the report, *Finding New Homes For Families Who Will Leave PWA Reconstruction Areas in Chicago.*[7] This report describes in detail the procedures of a Housing Service Bureau which was established. The Housing Service Bureau proceeded to publicize its activities, solicit vacancies, inspect vacancies for conformity with minimum standards, refer the relocatees to approved quarters, and to assume, insofar as possible, the direction of the subsequent movement of the people. But the report stressed that:

"The establishment of the Housing Service Bureau in the manner outlined below was sufficient to secure what seems to be at this time a satisfactory program for rehousing the white families.

"The immediate result, however, of a few weeks' work of the Housing Service on the colored vacancies made perfectly clear that there were not available more than 20% of the needed dwelling units."

Then under the sub-title, *The Problem of Rehousing the Negro*, the report further revealed:

"The Housing Council did not trust to voluntary listing of vacancies for the information about Negro vacancies. A house-to-house canvass was made covering the entire South Side area where the Negroes constitute 20% or more of the total population.

"As has been stated before this house-to-house canvass yielded 20% as many vacancies as were needed for rehousing the present occupants of the site.

"Although the Negroes occupy limited sections in three other parts of the city, no effort was made to list vacancies in these areas. It was discovered that in all parts of the city property owners were fearing and bitterly resenting the possibility of a widespread scattering of these Negroes. Areas where there was a small percentage of Negroes and and areas adjacent to these scattered Negro sections entered upon vigorous drives on deed restriction. In certain areas of the city landlords evicted Negro tenants in anticipation of white tenants unhoused by the North Side project. There was aggressive agitation to drive the Negroes back to the South Side.

"For these reasons the Council Rehousing Committee determined that it was necessary to prevent widespread scattering of the Negroes by a constructive program within this area.

"This program has so far included three features: (1) The recommendation to the PWA Housing Division as to certain changes in its contemplated program on the South Side. (2) The expediting of Negro subsistence homesteads using as a nucleus those families in the housing areas that the social survey learned were eager for this kind of housing. (3) The organizing of rehabilitation programs, particularly for those buildings rejected because of repairable condition."

Herein there was not only a failing of standard procedure—the voluntary list-

[6] Chicago provides an interesting indication of the contrast between white-and Negro-occupied slum areas. In that city, at least, the white area appears to be one of markedly receding population, whereas the Negro area is one of increasing population. Four square miles of slum and blight area, white-populated, declined from 186,639 inhabitants in 1920 to 137,663 in 1930 and 121,036 in 1940. Meanwhile a similar four-square-mile area of Negro residency rose from 152,413 persons in 1920 to 163,205 in 1930 and 191,861 in 1940. The effects on relocation operations are obvious.

[7] Frequent reference to Chicago is made throughout this article. Residential segregation of Negroes, the essential cause of the distinctive aspects of the problem of relocating Negroes, is ubiquitous enough that a well-chosen city demonstrates much of the difficulty. Chicago is aptly illustrative because it presents in the total Negro-inhabited section of its South Side an area so rigidly contained that it is termed "a city within a city." Here the overcrowding is at points Calcutta-like. Moreover, this area has been earmarked for early slum clearance activity and the city has sixty-million dollars in hand for a slum clearance-redevelopment housing program. The program is under way and thus in Chicago the problem is present in sharp focus.

ing of vacancies—but quick and complete yielding to the race restrictions which rendered vacancies insufficient in the first place. No effort was made to list vacancies in the areas of limited and scattered Negro residence. The Council instead sought vacancies precisely where they were certain to be more scarce and to place relocatees in the very area where crowding was a certainty. Little wonder then at the next consequent step, "a constructive program," which appears to have included (1) reducing the amount of housing to be built and perhaps increasing density, (2) a tangental excursion towards "subsistence homesteads," and (3), efforts to induce rehabilitation exactly where crowding was so great as to raise additional relocation needs. Delayed relocation progress and diluted rebuilding achievement, in return for doubled efforts, were doubtless the results of the expediencies employed in Chicago in 1935.

Favorable Factors in the Prewar Relocation of Negroes

Yet, at that time and for several years later in Chicago, as in other cities in which clearance of Negro-occupied sites occurred, there were available certain circumstances facilitating the relocation of Negro families, even within the confines of a racially-segmented housing supply. There were doubtless a few partially vacant and some sparsely occupied sites available. There were some vacancies even in the Negro-occupied areas. There was an acceleration of dwelling turnover resulting from defense-caused population movement outwards, to other localities, for employment and into the armed services. Moreover, in some cities, particularly in Chicago, similar white population movement produced vacancies peripheral to Negro neighborhoods. The slum residents themselves were predominantly low-incomed and doubling up and crowding-in were regarded as but a temporary prelude to project residency. Indeed the Negro community at large welcomed the distinctly novel and refreshing prospect of large scale provision of *new* housing open to Negroes. Despite, then, the complications of Negro relocation, there were a few favorable site and supply factors.

Relocation of Negroes in a Changed Context

The relocation of Negro site displacees, in the larger Northern cities and as an aspect of urban redevelopment will take place in a context significantly different from that of the early public housing experience. The distinction exists in six major respects: First, those circumstances facilitating Negro relocation during the late thirties no longer obtain. Second, the economic and social characteristics of Negro occupants of slum areas today more seriously complicate relocation than before the war. Third, the number of Negroes living in slum areas is much greater. Fourth, the relocation process itself is so related to large-scale redevelopment as to render of little real usefulness "expedient" relocation from Negro-occupied slum areas. Fifth, the social character of the operation militates against expedient approaches. And sixth, Negro acceptance of relocation proposals may prove most difficult to obtain.

Favorable Factors No Longer Exist

Neither vacant sites nor vacant units within the existing supply of shelter are available today to facilitate Negro relocation which, as we have indicated, characterized the early public housing experience. There are few vacant sites left within the Negro ghettos. This was the case even during the war. "There were shortages of housing, materials, and time. This dictated a war housing pro-

gram of building on vacant sites. But no sites could be found for Negro occupancy within the Black Belts of the North," reports Weaver.[8]

By now the few vacant sites remaining available in the thirties have likely been put to new and expanding industrial uses. The growing efforts to check industrial flight and the industrial building boom lend strong support to the probability. Commercial use of small parcels, for parking lots, garages, etc., and public use, especially for schools to serve the growing populations, have doubtless further consumed the little vacancy which otherwise might remain available. The net effect of this combination of industrial, commercial, and public construction is that totally or partially vacant sites are scarcely available for the construction of relocation housing.

In most Negro segments of urban housing supplies, vacancies simply do not exist as they did in the thirties. Little or no privately sponsored residential building takes place, or can be expected, in the racial ghetto where sites are so few, so costly, and so blight-exposed. The marked increase in Negro ownership since 1940 has by no means meant a corresponding increase in the volume of available shelter in the larger cities particularly. There the properties purchased have usually been multiple dwellings already Negro-occupied. Meanwhile vacancies cannot now be created in the existing shelter by structural conversion, the passing social virtue in the approach having already become ghetto vice—the makeshift "kitchenette" and the basement "dungeon."

New Characteristics of Negro Slum Dwellers

The current economic and social characteristics of Negro slum dwellers in the big cities leave relocation far more complicated than before the war. Various studies by governmental and private agencies provide abundant evidence of increased Negro incomes resulting from war-caused employment gains. Since Negroes are confined to the ghettoed slums, irrespective of income ability, it is certain today that they include not only fewer of the relief recipients and low wage-earners of the depressed thirties but many middle and a few upper-income families.

Today's low-incomed Negro occupants of the slums, because they are so largely war and postwar inmigrant workers, are in greater proportions single persons and childless couples. For these same reasons, however, they are generally ineligible for public low-rent housing and hence harder to resettle. Moreover, the new and appreciable element of middle and upper-income families living in the slums is not only ineligible for public housing but possesses housing ability and tastes not easily met in the racially restricted market. The latter families, consistent with their incomes and savings, desire to own homes such as they see featured in the magazines and to rent apartments in "the better neighborhoods."

For example, a report on a survey conducted in a Negro-populated slum clearance area in Chicago revealed that over forty-two percent of the reporting families had incomes in excess of $2,500 per annum, though the local public housing authority had at that time a top admission limit of only $2,150. Sixty-two per cent of the families reporting were single persons and couples and hence ineligible for public, low-rent projects in Chicago.[9]

[8] Robert C. Weaver, The *Negro Ghetto* (New York: Harcourt, Brace and Company, 1948), p. 91.

[9] Most local public low-rent housing authorities give decided preference to families with children. Less than one per cent of all of the public low-rent dwelling units in the country are 0-bedroom units (that is, for single persons and couples). Cost limits based on rooms, instead of dwelling units, are provided in the Housing Act of 1949. Local hous-

(*Footnote 9 continued on page 281*)

Indeed only twenty per cent of the reporting families were by income and size eligible for public low-rent housing. The complication is obvious since this housing is to be the main absorber of slum displaced families, especially Negroes.

Therefore, there will readily rise a temptation to permit such public housing ineligibles to "shift for themselves." Yet permitting the huge mass of ineligibles—single persons, childless couples, and families with too much income—to shift for themselves is as unsound as it is tempting. The single persons are predominantly young and marriageable. To be sure many of them are actually already married and await arrival of their mates who have been left in the South only temporarily. Many of the childless couples will have children in due course and sooner than that are apt to be joined by other relatives. Further subdivision of structures is unavailing, as earlier indicated, to permit orderly housing of more people in the structures now in the ghetto. Two patterns of unfortunate effect are the likely results. In a city, such as St. Louis,[10] the better and less densely populated area beyond the slum consists of well-maintained single and two family homes, owned and occupied by middle, and few upper income, families. Because of both their higher standards of occupancy and the lack of pressing need for added income from "taking in roomers," these families will resist absorbing the displacees. On the other hand, in cities such as Chicago,[11] where the residential structures throughout the principal Negro ghetto are mostly absentee-owned, huge, old mansions and large apartment buildings, the rooming house, makeshift kitchenette pattern is well established. In such a situation kitchenette keepers and rooming house operators may seek to absorb the displacees. Neither process, however, is desirable. In the first instance, areas adjacent to the early clearance area will bear the brunt of the displacement and the relocating agencies will be assured of a heavy relocation volume when succeeding moves are made. In the latter instance, blight spread is hastened.

On the other hand, heightened housing standards and tastes, plus better incomes, cause Negroes living beyond the slums to resist an influx of slum displacees. These same factors sharpen the desire and ability of those within the slums to flee them. Hence the net effect of pushing people off the slum sites to shift for themselves may be Negro flight to the peripheries of Negro confinement, thus heightening racial tensions at the very points where they are already high.

There is then little happiness of choice for the city itself between relocation to raise the rate of slum growth and relocation to boost racial tensions.

Negro Slum Population Increase

The third contributing factor to increased difficulty in relocating Negro

(*Footnote 9 continued from page 280*)

ing authorities will thus be able to develop even less units for singles and couples than the now limited provisions. Furthermore, other provisions in the new law encourage the housing of larger families. See section 306 of the act.

[10] In St. Louis, expansion of the principal area of Negro confinement westward towards Kings Highway during the war added 7,035 dwelling units in 107 blocks potentially open to occupancy by Negroes. See *Trend of Negro Areas in St. Louis, 1948*, jointly published by the St. Louis Urban League and Social Planning Council. The use of this housing, however, has largely remained single-family and two-family in accordance with original construction. Moreover, much of it has been substantially improved and is owner-occupied by white families remaining in the areas as well as by Negro white-collar workers and professionals.

[11] The prevalence of various forms of subdivision of the residential structures is a well-known practice on Chicago's South Side. Conversion from white to Negro occupancy of huge old mansions and apartment buildings is often accompanied by subdivision of the structures into more and smaller units. Currently the Office of the Housing Expediter is laboring against a growing pattern of conversion of flats and houses into pseudo hotels. On January 27, 1949, the *Chicago Sun-Times* reported an instance of an absentee owner of a building who converted a single four-room basement apartment into 14 dwellings, described by a city building inspector as "dungeons." To deliver slum displacees into such benevolent despotism assuredly makes slums faster than they are cleared.

families is the sharply increased density of Negro-occupied slums since 1940. Negro migration from the rural south since 1940 has meant that in northern and western cities, such as Chicago and Los Angeles where Negroes were crowded in slum areas before the war, today they are literally manheaped. According to the Housing and Home Finance Agency, the urban non-white population, outside of the South, increased from 2,820,000 in 1940 to 4,776,000 in 1947 or by 1,956,000 persons. The following percentages of non-white population increases as of April 1947 over 1940 are illustrative: Akron, 91.9; Boston, 33.8; Chicago, 35.9; Detroit, 102.6; Los Angeles, 88.5; New York, N. E. New Jersey, 50.2; San Franciso-Oakland, 66.2; and Youngstown, Ohio, 30.0.[12]

While current data on a nationwide basis is unavailable to show the distribution of such increases within the Negro ghettos, undoubtedly the slum neighborhoods received most of the influx. The insecurity of the new urban setting and the meager finances of the migrants doubtless moved them into the slums where they could find social acceptance (often friends and relatives) and cheaper, though more cramped, niches of living space. In such areas, however, little if any actual increase in dwelling space has taken place and more likely conversion to industrial or other use, plus fire and other demolition, have decreased the dwelling units available.

Chicago again provides a current example, though a most conservative one. In a 100-acre redevelopment site of total Negro occupancy there now live 12,134 persons as compared to the 9,079 inhabitants of the area in 1940, an increase of one-third. The 12,134 persons comprise 3,580 household units (single persons, couples, and families with children) which must be displaced so that new housing accommodating only 1,450 households can be provided. Three hundred and ninety-six more families with children must be displaced than the number of new units to be built. Completing the application of this quite unrealistic assumption that all of the new housing will be occupied by families with children, a net displacement of 4,581 persons, or 37½ percent of the site occupancy involved would take place.[13]

Apply the realities, however, and even that 37½-percent displacement can easily become near total, depending upon the degree of off-site pressure for the new housing, the relation of displacee needs and desires to the sizes and kinds of housing units available, the relation of rents and prices charged to the displacee's ability to pay, and other management policies and standards, including racial occupancy. Yet this example of the effect of sheer population load on the relocation problem is conservative. The area's density is only one-third over that of 1940, while the city of Chicago's over-all Negro population increase since 1940 is conservatively estimated at 38 percent.[14]

Negro Relocation Now A Cog in Redevelopment Movement

A fourth factor heightening the complexity of relocating Negroes from slum areas, when the clearance is for urban redevelopment purposes, is the integral relationship of relocation to redevelopment. The *Journal of Housing* article,

[12] From a Comparison of Non-white Population and Households for 1940 and 1947, with Number and Per Cent of Change, for 33 Metropolitan Districts, April 1947, an unpublished compilation by the Public Housing Administration.

[13] One thousand three hundred ninety-two persons and 2,684 persons comprising 1,342 childless couples when added to an estimated 1,505 persons in the 396 excess families with children (396 x 3.8, average site family-with-children size) together equal 4,581 persons or roughly 37½ per cent of the total site population of 12,134. Basic figures obtained from the Chicago Land Clearance Commission and derived from a survey of all of the households in the area.

[14] Estimate of Philip M. Hauser, Chicago Community Inventory, released September 1948.

earlier quoted, pointed to the necessity of "much improved standards as to where and when displaced families should move," in connection with "large scale urban redevelopment," if the transposition of the slums is not to result. That problem is most sharply posed by Negro-crowded slums marked for clearance.

Relocation as a necessary chore preliminary to the construction of a single public housing project was one thing. Relocation from a single site, while other sites are also being cleared or in advance of the clearance of other sites, perhaps in the same or an adjoining area, becomes quite another thing. Here there is a series of actions, collateral or consecutive, or both. Order, timing, and unabated progress become imperative and coordination an absolute necessity. Relocation is a cogged wheel in the machinery of redevelopment. If the relocation lags, the progress, perhaps even the feasibility, of parts or the whole of the redevelopment program, is jeopardized.

Consider the effects on the redevelopment program of several expedients likely to be employed in relocating Negro families. If relocation from an early site simply pushes the heavy excesses into the adjoining areas[15] then the relocation load becomes cumulatively greater as the rebuilding program attempts to move ahead in the general area, thus slowing the redevelopment program. Or, if the excess is served by first providing some relocation housing in "their neighborhoods," with such housing built on the few scattered lots remaining vacant no matter the probable unsoundness of such sites for residential use, and despite the resultant high densities, then the effect is to lower the quality while hiking the costs, of the redevelopment program. Or, get relocation under way by first building for the housing of the displacees on the vacant parcels along the outer edges of the Negro community, thus sealing in the Negro ghetto but likewise "blacking out" any real motivation for redevelopment in the area.[16] Or, finally, suppose that the avoidance of vacant land construction forces resort to slum clearance before construction of public housing accessible to Negroes.

Here the inevitable delay of the initial relocation in turn prevents public housing from receiving the larger and low-income families residing elsewhere in clearance areas. Thus is stayed the progress of major public redevelopment projects to be located in, partially located in, or perhaps only to pass through such areas.[17] These are the tempting ex-

[15] Most displaced persons tend to resettle in the same general area. "Most of the families went to the surrounding neighborhoods . . .," 3,000 *Families Move to Make Way for Stuyvesant Town.* "Eighty-nine per cent of the slum clearance families studied relocated inside of a one-mile zone of the slum . . .," "Effects of Slum Clearance and Rehousing on Family and Community Relationships in Minneapolis," F. Stuart Chapin, *American Journal of Sociology*, March 1938, pp. 744-763. The proportion of Negro resettlement in the same general area is bound to be greater than that of whites.

[16] Here the Chicago program is also illustrative. Thus far the great bulk of all of the housing intended and likely to be occupied by Negroes, whether public, low-rent relocation, non-profit corporation, or private redevelopment housing is scheduled for the Negro ghetto on the south side. While the two agencies which will develop and manage the low-rent and middle-income housing profess anti-discrimination policies, white fears of status loss from south side residence and the housing hunger of Negroes will together produce all Negro occupancy. A proposed measure, the Carey ordinance, aimed at requiring open occupancy in the private redevelopment housing was defeated. The first two private redevelopment housing projects will therefore continue designated for Negroes. The net effect of total Negro occupancy of the initial developments on the "Negro" south side will be public official approval to buttress existing public opinion that the area is for "Negroes only." Private finance is not apt to participate where the risk is that the only effective market may be Negro. Without that participation, is redevelopment of a seven square mile area likely?

[17] Take Detroit, for an example. There the Plan Commission has indicated the need for additional living space for the city's one-eighth Negro population. It has pointed to the likelihood that "demolition for parks, expressways, or public buildings of deteriorated areas now occupied by Negroes may create new areas of tension as the displaced families look around for new places to live." (*The People of Detroit*, Detroit City Plan Commission, 1946). Yet it appears that the Detroit Housing Commission is not preparing to contribute to the meeting of this crucial problem. It has recommended twelve sites for an anticipated public low-rent housing program. While eight of the group are vacant land sites, only "one project (partially vacant) located at the

(*Footnote 17 continued on page 284*)

pediencies now likely to "drag out" or "drag under" redevelopment.

Again the Chicago slum clearance-redevelopment housing program is illustrative. Even now the program is dragging because the determination has been made to redevelop the South Side without disturbing the existing racial pattern in the city. Relocation housing is to be provided but not on a few large sites, of which plenty are available within Chicago's twenty square miles of vacant land. The ruling element in the City Council rejected such sites even before they were formally submitted by the Chicago Housing Authority, the responsible agency for development of the relocation housing. The aldermen then reversed procedure and selected sites themselves.

Nine sites were chosen. What was gleaned represents the "land leavin's" of a great city, tiny parcels of land adjacent to railroads, canals and factories and pocketed in the slums. Only four of the sites are completely vacant. From the remainder people must be relocated so that relocation housing can be built for other relocatees. One of the sites, within the South Side Negro ghetto, will contain low-rent apartments, at 170,000 per-square-mile density. Another will usurp the play, if not the needed expansion space of a crowded, double-shift school. Still another involves land costs of $3,000 per dwelling unit. No one of all the sites fully meets desirable standards, according to the Chief Planner for the Chicago Housing Authority, and the whole package of sites drew condemnation from the Executive Director of the American Society of Planning Officials.

Relocation Criteria Applied to the Negro-Occupied Site

In the meantime efforts to employ expediencies are apt to bear highly questionable adequacy when measured against today's social standards for relocation. These criteria include requirements that clearance should not be undertaken without plans to house the displaced; that the displaced should have preferential opportunity to reside in the redevelopment housing; and that those displaced in excess of the new relocation and the redevelopment housing provided should be rehoused in shelter of no lower quality than that vacated, at rents and sales prices within their means, and in locations as desirable as that of the redevelopment area, with respect to employment, community services and public utilities. It is significant that certain of these social considerations, intended to minimize displacement hardship, have become state law.[18] Among the urban redevelopment statutes which contain provisions designed to prevent undue relocation hardships on families living in the redevelopment areas are those of the District of Columbia and most of the states with large slum-housed urban Negro populations, including: California, Illinois, Indiana, Kentucky, Massachusetts, Michigan, Minnesota, New Jersey, New York, Pennsylvania, Virginia, and Wisconsin. Moreover, the slum clearance provisions of the Housing Act of 1949 place upon localities the responsibility that:

"There be a feasible method for the temporary relocation of families displaced from

(*Footnote 17 continued from page 283*)
periphery would be for Negroes," according to the Mayor's Interracial Commission. The latter further asserts that the Housing Commission "also proposes to 'clear' a number of sites now . . . in existing Negro slum areas and by increasing the density per acre to house some more Negro families than now live there." It would appear that Detroit's initial post-war public housing efforts are apt to increase relocation needs rather than serve them. The resultant risk of overall redevelopment delay is obvious, and the Plan Commission's fear of new areas of race tension becomes more real. (See *Summary of Public Housing Program as It Pertains to Race Relations*, a mimeographed statement, Detroit Interracial Commission, April 18, 1949.)

[18] See beginning at pp. 35, 80 and 86, *Comparative Digest of the Principal Provisions of State Urban Redevelopment Legislation.* National Housing Agency, Office of the General Counsel, April 1947.

the project area, and that there are or are being provided, in the project area or in other areas not generally less desirable in regard to public utilities and public and commercial facilities and at rents or prices within the financial means of the families displaced from the project area, decent, safe and sanitary dwellings equal in number to the number of and available to such displaced families and reasonably accessible to their place of employment."[19]

Large-scale Negro resettlement clearly makes compliance with such requirements difficult. First off, the limited access of Negroes within the existing supply renders such planning difficult. Vacant sites for low-rent housing to serve as relocation shelter is apt to be a near-unsurmountable problem, as has been suggested. Competition for shelter from veterans and urgent non-veteran applicants from outside the redevelopment area is a complication reducing the relocation capacity of any public-aided housing. The likely prominent role of the private redeveloper in the program leaves prior occupancy opportunity to the relocatees of dubious fulfillment—if any sponsors of housing open to Negroes can be produced. The excessive costs of existing housing open to Negroes will make "rents and sales prices within their means" unattainable for many. And quite patently new locations equally as desirable as the old will often be difficult to obtain.

"*Negro Clearance*"

The approaching likelihood of major urban redevelopment efforts raises more sharply than ever the whole question of public attitudes towards the reshuffling of land use and property interests on such grand scale. By May of 1948, for example, a distinguished group of public officials, as they discussed the entire subject of rebuilding our cities, agreed that "the earlier proposals for urban redevelopment had been hopelessly deficient in that they gave little if any attention to public opinion or acceptance *even within the areas in which the operations were to be carried out.*"[20] Certainly redevelopment does become a rather hopeless ideal if public acceptance is not sought, and substantially won, particularly in the redevelopment area itself. Obviously too, the residents of the clearance area subject the redevelopment proposal to the closest scrutiny when they find themselves face to face with the necessity of dislocation. At this crucial stage Negro acceptance of the necessity of the relocation sought is apt to prove a knotty proposition.

Negroes of course have no desire to remain in the slums. Nevertheless the friendly attitude of the Negro community towards public housing, which rendered relocation hardships endurable, does not appear in response to urban redevelopment proposals. Negroes readily appreciate the more severe impact of urban redevelopment relocation. They understand that more projects and hence greater volumes of displacement are involved. They know too that redevelopment projects are not always housing projects, at least not open to them. They are keenly aware that private redevelopment housing may bar them on the basis of rents, race, or both. In sum, Negroes realize that huge areas are earmarked for clearance, threatening partial or total loss of their already too little living space. And they suspect that, in the absence of public policy and controls to prevent it, the real masters of urban redevelopment will be the forces intent upon recapturing Negro living space for the "right" people, while at the same time ruling Negoes the "wrong" people to live

[19] Section 105 (c) of Housing Act of 1949.

[20] Coleman Woodbury and Frederick A. Gutheim, *Re-Thinking Urban Redevelopment*, Public Administration Service, Chicago, Illinois, 1949, p. 10. (Italics added.)

elsewhere in the city. There is, after all, considerable realism in the fact that Negroes, having been compelled to "take" space from the larger community, easily believe that the larger community will take it back at first opportunity.

That slum clearance will result in "Negro clearance" already is a strong and growing Negro feeling in the larger cities. Thus, in San Francisco Negroes made voluminous protest against a recent urban redevelopment proposal; in St. Louis, last year, they were a major factor in the defeat of an urban redevelopment bond issue; and in Chicago they are already in the courts, determined to block a redevelopment program already in existence.

Attached to and activating the central fear of space loss are the various reservations and misgivings which relocation prospects awaken in various dominant elements in the Negro community. These fears and resistances are similar to those arising in the face of clearance of any slum area, that is, they emanate from the threatened area's professionals, small businessmen, property owners and politicians. There are, however, two significant differences. First, the Negro fears are greater and hence the resistances potentially sharper. The Negro professionals, businessmen and property owners are concerned with more than the loss of good market and residential locations. They dread the likely denial of opportunity in the redeveloped areas as much as they feel certain of the irreplaceability of their interests elsewhere in the existing commercial and residential areas. And the Negro politician in the slum areas not only has rich resources in the evils and crowdedness of the slums but realizes that he must practice his craft "among his own." Secondly, this racial differential in opportunity is easily communicated to and gets a sympathetic response from all of the inhabitants of the clearance area, even the lower-income and tenant masses. The Negro businessmen, professionals, and property owners having made "good," despite racial barriers, symbolize racial advancement. Disturbing their status quo is easily interpreted as anti-racial. The politician's assertion that clearance will weaken "our political power" is most effective with those to whom not only political jobs are more meaningful than to others but whose "rights" have to be won and protected politically. This easy cloaking of selfish interests behind the group objectives of social advancement and political strength effectively buttresses the major fear of space loss.[21]

Despite, however, the complexities presented and the likely inefficacy of expedient approaches to relocating Negroes the problem is not insoluble. On the contrary, what is suggested is that, there being no longer sufficient feasibility in resort to expediency, the more logical means to the end must be employed. Those means are simple to discover, if discover them we must.

Required: A New Way Out

Implicit in this entire presentation has been the assumption that the Negro families heaped in the slum areas are to be relocated without disturbing the existing racial pattern of residence in the particular locality. It is, however, this assumption which blocks off the plainly-marked way out of a rather simple entanglement. First, where there is not access for displaced families to the vacancies in the existing supply, then make the vacancies accessible. Second, where there is not enough space for the new housing necessary, then obtain the space.

[21] For a more detailed discussion of the role of "vested interests" in Chicago's principal Negro ghetto, now facing redevelopment, see this writer's "Break Up the Black Ghetto," *The Crisis*, February 1949, pp. 48-52.

Third, and meanwhile, of course, establish and preserve flexibility in all public-provided and aided shelter so that the city can readily, whether transitionally or permanently, absorb in such housing whatever people and from whatever clearance site.

These three principles, as essential to the orderly and effective relocation of Negro slum-resident families as they are elementary wherever there are too few places to which to remove too many people, would prove easily acceptable were the people not Negroes. Yet the color barrier, when it must yield in the public interest, can be made to yield.

The public need, like the mother of invention, can produce some means for the meeting this problem despite the obstacles of fear.[22] Indeed some of these possibilities obviously now exist.

Even the first avenue is open to public influence. Especially as appreciable additions to the over-all supply take place and vacancies (initially-created by movement to this new housing) become occupied by Negroes, the city's minimal responsibility is to prevent intimidation and violence designed to discourage such occupancy. Where Negro entry does take place and the Negro pressure for more space is great, the non-racial community conservation agreement is a promising device for preventing the threatened inundation and establishing occupancy in accordance with sound standards.

Usually where there is appreciable vacant land in a large city, it is tax delinquent, leaving the city in a strongly justifiable position for seeking the money and the machinery for taking up such land and making it available to meet housing needs. As the President's 1948 *Economic Report to Congress* pointed out: "The present acute housing shortage requires a large amount of new construction in outlying areas before we can engage in slum clearance and urban redevelopment on the large scale that will be needed." Thus too, the Housing Act of 1949 extends federal assistance to cover the acquisition of open, or predominantly open areas, within or outside the city limits. Public-acquired new areas are the obvious answer to the space needs of Negroes heaped in slum clearance areas.

It is the third approach—racial flexibility in public-provided and aided shelter—which offers the greatest possibility to the city government itself in answer to the problem of relocating Negro families.[23] It is this pool of housing in which, of course, there ought to be the utmost flexibility, if redevelopment is to move ahead. This housing, both the traditional public low-rent and other

[22] For a thorough analysis of the impact of the circumscribed Negro slum on the urban redevelopment effort and a careful detailing of the approaches essential to a solution of the problem, see Robert C. Weaver, "Urban Redevelopment —a Threat or an Opportunity," *Negro Ghetto*, Harcourt Brace and Company, 1948. See also Charles Abrams, "The Segregation Threat in Housing" *Commentary*, February 1948.

[23] Throughout this discussion there has been little reference to considerations other than the operative aspects of the problem. In connection, however, with the determination of the racial occupancy patterns of public-aided housing in an urban redevelopment program there arises a moral consideration which ought to be mentioned here. Urban redevelopment is basically the mechanism by which the city seeks to strengthen itself and save its future—holding its people and industries and attracting more of both, as well as building up its tax base, so that it can remain, or become again, a going concern. Thus the relocation it asks of Negroes it asks primarily to satisfy crucial needs of its own. At the same time the relocation required is laden with real risks for Negroes. However, government has the power to eliminate these risks particularly in the housing it provides. Nevertheless the tendency is to both exact the sacrifice of relocation and retain the practice of residential segregation. The indefensibility of the position is plain. The moral issue involved, it is safe to predict, will ultimately but quickly become a legal issue. Having admonished the courts not to enforce privately-achieved racial restrictions, parcel by parcel, the United States Supreme Court is not apt to approve the employment of public funds and powers, by the legislative and executive branches, to make gigantic renewed efforts in the same direction. If, moreover, as the Supreme Court has held, cities cannot map off themselves in white and black chunks, they can hardly rebuild themselves on the same basis. While the issue is in litigation urban redevelopment may remain at relative standstill.

public-aided projects, is the creature of various combinations of public power and authorization—public monies; powers of land acquisition, grant, and dedication; tax deduction or tax exemption, exceptions to ordinances; licenses; charters, etc. If the local government is so disposed it can more than simply prevent this new housing from further confusing shelter distribution in the city; out of self interest it can employ this housing to further redevelopment.

Obviously these three basic approaches cannot be employed in racially fear-ridden housing markets without careful preparation. The reporters of the Conference on Obstacles to Urban Redevelopment in American Cities credited to the conferees this attitude on racial segregation:

> "They believed that, like many other aspects of redevelopment, minority group questions could be best dealt with on the basis of clearly stated local facts. If the responsible agency saw these facts—analyzed, organized, and carefully presented—were made available at the proper time, the prospects for intelligent decisions and actions would be much better than if the agency held back and allowed the inevitable public discussion to start on a plane of emotionalism and cliches."[24]

It is submitted that in many larger cities "the facts" of Negro relocation, with minor variations, will fit the outline that has been developed. Where they do, the "expedients" of the thirties will not amount to the kind of relocation essential if redevelopment is to take place with dispatch, neither boosting slum growth faster than slum clearance nor heightening instead of relieving housing-produced racial tensions.

In these cities the facts must be "analyzed, organized, and carefully presented" to be sure. No longer can the agencies in such cities afford to hold them back and succumb to "emotional cliches."

If redevelopment of Negro-occupied slums is to take place, then the beginning of the undoing of residential segregation will have to take place where urban redevelopment must begin, in the relocation effort.

[24] Woodbury and Gutheim, *op. cit.*, p. 16.

The Regulation of Some New England Holding Companies

By LINCOLN SMITH

MUCH has been written about the vast Insull utilities system which extended to some thirty states. Although the regime collapsed with the downfall of the Insulls almost twenty years ago, some of the innovations in mergers and management have had a positive effect on electric power, textile, and other industries.

The exposure of the Insull techniques by the investigation of the Federal Trade Commission in 1931-32 immediately labelled them as "bad." This flood of "literature of exposure" was popular and motivated the death sentence clause in the Public Utility Holding Company Act of 1935 to be enforced by the newly-created Securities and Exchange Commission.

It is still too early to evaluate the results of the Insull program. The Securities and Exchange Commission has not yet completed the mammoth task of attempting to unscramble the scrambled mess of high finance, visionary speculation, pipe dreams, and organizational concoctions of these disseminators of the holding company technique. But with the present advantage of fifteen years of historical perspective, it would be an over-simplification to conclude that the Insull program was entirely "bad" or "good."

The program, which was unregulated for several years because it did not recognize state lines, was so gigantic that a reappraisal would require several volumes. A partial reappraisal, however, can be done by a "close up" of the activities in a particular region, such as New England or a sector of that region.

The Insull Invasion of Northern New England

The Middle West Utilities Company, the top holding company of the Insulls, owned in 1925 the Twin State Gas & Electric Company which did a public utility business in several towns and cities in New York, Vermont, New Hampshire, and Maine. Between May and August of 1925 the Middle West Utilities Company bought the common stock of the Central Maine Power Company. During that period it also bought a controlling interest in the Manchester, New Hampshire, Company, the Rutland Railway & Light Company property, and several small utilities in Vermont.[1]

The Insull speculation for control of Maine power companies involved the regional power development of much of New England.[2] Maine is the only state in the Union which has a drastic law prohibiting the export of hydro-electric power. Although this state possesses about 50 per cent of the undeveloped hydro-electric power in New England, a large amount of Maine's power remains undeveloped. This isolationism is significant for nearby states which have been forced to develop marginal power sites and use coal and oil which needed to be conserved for more specialized uses. The Insulls spent almost $200,000 in 1929 in an attempt to persuade the Maine voters to repeal the power em-

[1] *Official Report of Proceedings Before the Securities and Exchange Commission.* Washington, D. C. November 7-December 17, 1940, Docket Section. File 59-15-1-1 Original. Utilities Section 11 (b) (2). Northern New England Company. New England Public Service Company. p. 145.

[2] Lincoln Smith, *The Evolution of Maine's Public Power Policy* (Berkeley: University of California Press, May, 1950).

bargo. When this campaign failed the power companies announced cancellation of several contemplated power developments in the state.

The story of the sale of Central Maine was told by its President, Walter S. Wyman, at the Federal Trade Commission hearing in 1932. He and Guy P. Gannett did not control the Central Maine Power Company by their own ownership, but they did "with ours and other stock that my friends owned."[3] "We gave the Middle West Co. an option on our stock, which had added to it later other stocks that gave the Middle West control." It was also brought out that the price paid per share was $140 and that, before this consolidation, very little of the stock had been sold on the market. Small and spasmodic sales had been made at from $50 to $60 per share.

About August 1925, under the direction of the Middle West Utilities Company, the New England Public Service Company, the major subholding company in the system for this area, was organized in the state of Maine.[4] Through common stock ownership, NEPSCO was controlled directly by the Middle West Utilities Company. The reason given for its organization was to consolidate the control of the Middle West Utilities Company's operating companies in the three northern New England States.[5]

This arrangement continued until 1928 when the Middle West Utilities Company transferred NEPSCO's securities to another sub-holding company, the National Electric Power Company.[6] Thus Middle West controlled National Electric Power Company which controlled NEPSCO. And NEPSCO owned directly the equity stocks of the Central Maine Power Company, the Cumberland County Power and Light Company (now merged with the Central Maine Power Company), and the Central Vermont Public Service Corporation. It also owned about one-third of the securities of New England Industries, Inc., which was incorporated in 1929 to control industrial investments. In Maine, one notable exception to the Insull holdings was that of the Bangor Hydro-Electric Company.

Central Maine had investments in the Cushnoc Paper Corporation and two or three industrial companies before its sale to Middle West in 1925.[7] It had bought small amounts of the stock of the Edwards Manufacturing Company of Augusta largely because of its interest in the water power which the Edwards mill owned on the Kennebec River. In October 1927, the Central Maine Power Company purchased control of the Edwards Manufacturing Company.[8]

Martin Insull, President of Middle West, discussed on several occasions in 1925 and after, the ventures into textiles.[9] His plan was to organize a company and provide it with capital for the purpose of assisting industrial development in territories served by subsidiaries of the Middle West.

The first real step in branching out into industrial business was taken in 1928. The evidence indicates that it was a rather reckless adventure, a purchase resulting from a conversation between Messrs. Insull and Wyman, with some

[3] Hearing before Federal Trade Commission. Washington, D. C., March 16, 1932, re. Investigation of Public Utility Corporations. *Utility Corporations Report*. No. 42. Senate Doc. 92, Pt. 42. 70th Congress, first session. Washington (1932). pp. 70-1.

[4] Notice of Filing of Amended Plan of Reorganizing and Order Reconvening Hearing re. Northern New England Company and New England Public Service Company. December 5, 1944. Securities and Exchange Commission pamphlet. p. 2.

[5] SEC ms. *supra.*, pp. 145-6.

[6] *Ibid.*, p. 146.

[7] *Ibid.*, pp. 279-80.

[8] Stephen J. Kennedy, *Profits and Losses in Textiles*. New York (1936). p. 106.

[9] SEC ms. *supra.*, pp. 279-80.

knowledge of but without a thorough investigation of the properties.

The first Insull purchase was that of the Androscoggin Mill in Lewiston. The mill had lost money heavily and in June of 1928 its stockholders voted to liquidate. It employed about 1000 people at that time. Several meetings were held in Lewiston-Auburn in an attempt to raise money to restore the mill to operation. All failed.

Although Mr. Wyman was close to the local situation, Insull's decision appears to have been impulsive. After describing the failure of efforts to restore the mill to operation, Mr. Wyman's testimony said:[10] "Mr. Insull was in town not long afterwards and I told him about the situation and he said, 'Well, why don't you buy it?' I said, 'I don't know anything about running a textile mill,' and he said, 'Well, you can hire somebody that does.' As a result of that discussion, the New England Public Service Company, I think, bought the majority of the stock of the Androscoggin Mill, paying for it approximately $100.00 per share, bought it from the general public."

Shortly, NEPSCO acquired a controlling interest in the Hill Manufacturing Company in Lewiston and, in July 1929, the Bates Manufacturing Company was purchased. In July 1930 the York Manufacturing Company of Saco was added to the group.

Since all these mills were large users of power, it was typical of Insull methods to acquire them and put money into them to assure their continued operation and purchase of power. The argument was that prosperous mills mean prosperous communities which, in turn, made prosperous power companies possible. For instance: the timely purchase of the Androscoggin Mill enabled it to continue operation and certainly proved to be a great boon to Lewiston and vicinity.

Of much significance, yet difficult to evaluate, is the extent to which the purchase of these mills was motivated by their valuable power holdings.

The Edwards Company owned jointly with a paper company a power dam on the Kennebec River at Augusta, a site that would become more valuable with the construction of the Bingham dam and the resultant improved water flow at Augusta.[11] Mr. Wyman claimed this purchase would prevent the waste of power at the Edwards Company dam and also benefit the company.

Stephen J. Kennedy summarized NEPSCO's control over the headwaters of the Androscoggin, one of the best regulated rivers in the country, as follows:

"Ownership of the Bates Manufacturing Company also gave the utility working control in the Union Water Power Company of Lewiston. In addition to the dam at Lewiston, this brought to the New England Public Service Company control of the dams at the Rangeley Lakes, about seventy-five miles to the north, which were entirely owned by the Union Water Power Company, and also substantial control of the Azicohos Dam on the Magalloway River, a tributary of the Androscoggin, in which the Union Water Power Company held a 25 per cent interest. Since the New England Public Service Company had just completed construction of a new dam at Gulf Island and had purchased the Barker Mill at Auburn which owned the Deer's Rip Dam, and at which a new automatic hydroelectric generating plant had just been completed, this control over the headwaters of the Androscoggin was highly important to the power compnay."[12]

The industrial holdings of NEPSCO were segregated under the control of New England Industries, Inc. The Middle West organized the Mississippi Valley Utilities Investment Company with capital to assist industrial develop-

[10] *Ibid.*, pp. 281-2.

[11] Kennedy, *op. cit.*, p. 106.

[12] *Ibid.*, pp. 107-8.

ment in the territories served by Insull subsidiaries. This led to the organization of New England Industries, Inc., in 1929, the capital being subscribed about one-third by NEPSCO and about two-thirds by the Mississippi Valley Utilities Investment Company.[13]

An investigation by the Federal Trade Commission in 1931 summarized the Insull industrial interests in Maine as follows:

"In 1930, the New England Industries, Inc., was formed by the utility system, and all the industrial enterprises . . . owned by the Insulls were turned over to the new company. Some of the factories and industries had been acquired conditionally, on the purchase of power sites sought by the group. At the end of last year (1930) New England Industries, Inc., owned control of the Edwards Manufacturing Company, the Bates Manufacturing Company, Hill Manufacturing Company, Androscoggin Mills, and York Manufacturing Company. The operation of these mills provided steady employment for 4,200 persons with weekly payrolls aggregating $71,000.00, chiefly in textile and newsprint manufacture."[14]

Besides its venture into textiles, New England Industries, Inc., began, in November 1929, the construction of a new pulp and newsprint plant, the Maine Seaboard Paper Company at Bucksport.[15] The Industries expended $11,977,196 on the plant,[16] which began operation in November of 1930. According to Stephen J. Kennedy, in addition to the above investments, New England Industries, Inc., by December 1933, lent $5,379,000 to certain mills to finance the purchase of new machinery and to provide for general plant rehabilitation.[17] A loan was also made to the Keyes Fibre Company during its bankruptcy proceedings, 1932-34, and NEPSCO, the Industries, and Central Maine Power Company together owned enough to bring this company into the fold also.[18]

In contrast to the two previous years, the mills showed a slight profit for 1933. During this period they borrowed $4,240,000.[19]

Two distinct points of view were advanced in 1945 on the results of the Insull holdings in Maine. The Honorable Sumner T. Pike, then Commissioner of the Securities and Exchange Commission, in a Commencement address at Bates College condemned the utilities with:

"It happens that in this part of the State of Maine one of the most fantastic examples of monopoly gone wild occurred when Samuel Insull of Chicago bought our power companies which sell electric current, then bought or built cotton and pulp mills to make sure that they would buy the current which he had to sell, and later bought banks to lend money to the mills so that they could pay their power bills. This all, incidentally, with other people's money, not Mr. Insull's. In our shop at the SEC we are now attempting to salvage the remains of this particular mess and to get back to the hornswoggled investors such portion of their original stake as was not wasted in this so-called empire building."[20]

The veteran journalist, Sam E. Conner, immediately took exceptions to the above, contending that the state benefited because Walter S. Wyman induced Insull to buy Maine mills which were in bad shape and were thereby kept from liquidation. When the Insull financial empire began to crumble, he wrote, the Maine companies, thanks to the leadership of Wyman and Skelton, were in the clear.

Stephen J. Kennedy claimed that, in view of the expenditures made upon new equipment under the Insull regime and further improvements under subsequent management, these mills were

[13] SEC ms. *supra.*, pp. 279-80.
[14] New York *Times.* December 13, 1931. Section 2, pp. 9, 11.
[15] SEC ms. *supra.*, p. 285.
[16] Kennedy, *op. cit.*, p. 110.
[17] *Ibid.*, p. 110.
[18] SEC ms. *supra.*, pp. 285-8.
[19] Kennedy, *op. cit.*, p. 110.
[20] Lewiston *Evening Journal.* June 25, 1945.

modernly equipped and were in a position to compete effectively in the market in 1936.[21]

On closer analysis, the Pike and Conner statements were not actually contradictory. Commissioner Pike as a federal official was concerned with the activities in the high echelons in the Insull hierarchy and with the interests of investors. On the national level his view is correct. Mr. Conner considered the situation on a state and local basis. The evidence indicates that the holding companies did pour money into local industry and kept it going. Insull money may have been tainted money but in time of depression and crisis this shot-in-the-arm braced many communities. The issue is not clear-cut between nationalism and particularism because many local investors were losers. The evidence further indicates that, although the Insull hierarchy was top-heavy, much discretionary authority remained with local line officials. These were "grassroots" agents whose planning and decisions were highly particularistic. They were not "yes men" for Middle West.

The Insull Exodus

When the crash came in 1932-33 the Insull system was broken up. Middle West Utilities went into bankruptcy in 1932, as did National Electric Power Company, parent company of NEPSCO.[22] When the Mississippi Valley Utilities Investment Company went into receivership, a reorganization of the financial structure of New England Industries, Inc., resulted.

With 10,000-11,000 people employed by the subsidiaries of NEPSCO and 30,000-50,000 dependent upon those industries for their livelihood, Walter S. Wyman testified before the Securities and Exchange Commission that he and his associates considered it important that control of the company be brought back to New England, preferably the northern part. Receivers of the Middle West Utilities Company and the National Electric Power Company, Stone & Webster, representatives of two or three banks, the New England Power Association, and various people connected with other holding companies were reported to be showing interest in NEPSCO and there was considerable speculation as to its disposition. According to Mr. Wyman, "we felt it was of great importance to the communities and to the trustees involved that they be kept in the hands of people who had some sentimental interest . . . in New England and in Maine, New Hampshire and Vermont."[23]

Consequently, three interests came together to save the properties in New England. They were the Northern New England Company, a voluntary trust created by the investors in Maine, New Hampshire and Vermont, the General Electric Company, and interests connected with the Manufacturers Trust Company in New York. Northern New England and certain General Electric subsidiaries each held approximately 32 per cent of the common stock of NEPSCO, Manufacturers Trust Company about 26 per cent, while the remaining 10 per cent was held generally by the public. The voting power attributed to the common stock held above was as follows: General Electric Company subsidiaries 23.66, Manufactureres Trust Company 19.21, Northern New England 24.14, public generally 7.32.[24] In addition, Northern New England and General Electric subsidiaries held some prior preferred stocks which also had voting power. The holdings of Northern New

[21] Kenndy, *op. cit.*, p. 113.
[22] SEC ms., *supra.*, p. 147.
[23] *Ibid.*, pp. 156-7; also File 59-15-1-2. pp. 607-8.
[24] *Ibid.*, pp. 191, 193-4.

England Company, Manufacturers Trust Company, and General Electric Company together amounted to 69.88 per cent of the voting power of NEPSCO.

The SEC and NEPSCO

The enforcement of the Public Utility Holding Company Act of 1935 on NEPSCO has resulted in considerable litigation before the Securities and Exchange Commission since 1940.

The contentions against NEPSCO were: (1) that its corporate structure unduly and unnecessarily complicated the structure of its holding-company system, and (2) that said structure unfairly and inequitably distributed voting power among security-holders of its holding-company system.[25]

NEPSCO controlled five large operating gas and electric utility companies, rendering service in Maine, New Hampshire, and Vermont; and also owned 97.2 per cent of the common stock of New England Industries, Inc., controlling five textile companies and one newsprint company, plus a controlling interest in Keyes Fibre Company.[26] As of December 31, 1939, its net investments totaled $43,627,-638.30, of which amount $31,585,671.24 represented its net investment in various utility companies, $12,001,586.06 represented its net investments in New England Industries, Inc., and $40,381.00 represented miscellaneous net investments.

The Securities and Exchange Commission found the first charge correct, "in view of the numerous outstanding series of preferred stocks, the tremendous accumulation of preferred stock dividend arrearages, and the doubtful prospect that any substantial alleviation of the company's present financial straits will be forthcoming."[27]

Likewise the second charge was upheld.[28] In 1939 the common stock of NEPSCO, although only 24 per cent of the total capital stock liability and surplus per books of the company, controlled 74 per cent of the voting power. By holding substantially all of the common stocks of its operating utility subsidiaries, although only 15.1 per cent of the total amount of the outstanding securities of these subsidiaries, NEPSCO controlled 96.1 per cent of the voting power of the Central Maine Power Company until January 1, 1941, when preferred stockholders were allowed to vote, and 40.5 per cent of the voting power since then; 100 per cent of the voting power of Central Vermont Public Service Corporation, Public Service Company of New Hampshire, and the Twin State Gas & Electric Company; and 47.7 per cent of the voting power of Cumberland County Power and Light Company.

On May 2, 1941, the Commission ordered NEPSCO within one year to change its capitalization to one class of stock, common stock, or to liquidate its affairs and distribute its assets to its security holders.[29]

On December 6, 1941 NEPSCO filed a plan to eliminate these two defects.[30] It proposed to group the five utility subsidiaries of the company by states into three through a series of mergers and transfers. Thereafter, NEPSCO's holdings of common stock in the proposed three utility subsidiaries plus an amount of debentures of the industrial holding company would be distributed to the holders of prior lien preferred and preferred stock of NEPSCO; New England Industries would then merge into NEPSCO, and NEPSCO would change its name to New England Industries, Inc.,—the common stockholders of

[25] SEC *Release* No. 2737. May 3, 1941. p. 3.
[26] *Ibid.*, p. 5.
[27] *Ibid.*, p. 8.
[28] *Ibid.*, pp. 6-8.
[29] *Ibid.*, p. 12.
[30] SEC *Release* No. 3179. December 10, 1941.

NEPSCO would remain as common stockholders of the renamed NEPSCO which would hold securities of industrial companies. As a result NEPSCO would thereby remove itself from the utility business.

This would have given to the common stockholders only a "hope for the future," because the mills were not making money at the time and this was believed to be about all they were worth. Since the provisions were rather vague, it was considered a program rather than a plan. War was declared at about this time and no hearing was held.

The five utility subsidiaries were reduced to three.[31] In Maine the Cumberland County Power and Light Company was merged with the Central Maine Power Company, and in New Hampshire and Vermont the properties of Twin State Gas and Electric Company were acquired by the Public Service Company of New Hampshire and the Central Vermont Public Service Corporation.

On April 27, 1942 NEPSCO asked the Securities and Exchange Commission for an extension of one year for compliance with the order of May 2, 1941. After a hearing this request was granted.[32]

Textile Prosperity in Maine

Although the mills made money in 1936 and 1937, they lost for the next three years.[33] The losses totaled $1,537,660 in 1938, $478,329 in 1939, and $767,983 in 1940. The war years reversed the picture. Annual profits, deducting federal income taxes, were $2,125,292 for 1941, $1,117,091 for 1942, and $1,252,039 for 1943. The next two years were even better. The only mill in the textile group which did not do well was Edwards.[34] Since this mill makes a coarser fabric requiring less skilled help its competition came from the lower South where wages were reported to be 10 or 12 percent lower. The other mills found their competition with the upper South where the difference in the cost of labor was negligible.

Bank loans to the textile groups reached peaks of $3,300,000 in July of 1940 and again in February 1941.[35] A program of modernizing the mills, chiefly for machinery, was actively continued through 1940 until stopped by war restrictions in 1942. In 1939 a change in operating management was made. This involved selling arrangements for the gray goods. Organization lines were modified to co-ordinate purchasing, production, and distribution; control was tightened and policies were adopted to emphasize more strongly quality plus distribution and less strongly a peak volume of production. This included an intensive advertising campaign to popularize the Bates products. With respect to mill efficiency, Herman D. Rhum placed this group of five textile mills among the top 25 per cent in the country.[36]

With the industrials now making money, an amended plan of reorganization was filed on October 25, 1944. It was summarized as follows:

> "Briefly, the amended plan provides for the distribution by NEPSCO to its stockholders of its entire portfolio of the stocks of the utility subsidiaries and of the proposed new common stock of its industrial subsidiary, New England Industries, Inc. which is to be recapitalized, and for the merger of NEPSCO into Industries. The amended plan also provides that prior to such distribution the five textile subsidiaries of Industries be recapitalized."[37]

[31] SEC *Release* No. 3883. November 5, 1942; also No. 5477, December 8, 1944. pp. 1-2 For approval by the Maine Public Utilities Commission, see *Eleventh Biennial Report*, 1943-1944. p. 4.

[32] SEC *Release* No. 3987. December 19, 1942.

[33] *Official Report of Proceedings Before the Securities and Exchange Commission*. Docket Section. File 59-15. pp. 2167-9, 3240-1.

[34] *Ibid.*, p. 2548.

[35] *Ibid.*, p. 1691.

[36] *Ibid.*, p. 2355.

[37] SEC *Release* No. 5477. December 8, 1944. p. 3.

The Sale of the Industries

Some agitation arose on the part of substantial holders of NEPSCO's prior lien preferred stock to require the sale of the textiles. Likewise, on January 30, 1945, Lloyd D. Brace, a vice-president and director of The First National Bank of Boston, sought out William B. Skelton, President of NEPSCO, and Robert Braun, President of the five textile mills, and urged upon them the desirability and feasibility of selling the mills.[38]

The local planners and strategists did not discard sound business practices for local autonomy; rather they attempted to combine them. Very early in the negotiation for sale of the textiles the Central Maine Power Company stressed its traditional attitude that it is dependent upon the welfare of the communities it serves many of which, in turn, were largely dependent upon the textile mills.[39] At the time there were opportunities for mill owners to sell machinery and ship it away at great profit, and the company was anxious that no such policy should develop in the Maine mills.

Robert Braun, President of the mills after the death of Walter S. Wyman in 1942, stated that as a group, from the standpoint of dollars and cents production and the number of people employed, these mills were the largest single industrial group in the state with the exception of the New England Shipbuilding Company at Portland and the Bath Iron Works at Bath.

On the other hand, the Securities and Exchange Commission is charged with administering the Public Utility Holding Company Act of 1935, which, among other things, limits a holding-company system to "a single integrated public utility system," and other businesses reasonably incidental or economically necessary or appropriate to the operation of an integrated public utility system.[40]

The Commission interprets this on a functional basis, and this interpretation has been sustained by the federal courts.[41] There was apparently a clear-cut mandate to sever the relationship between the utilities and textiles. No valid reason existed for NEPSCO to hold power companies and the textile mills which had been "picked up" by the Insulls before the passage of the Holding Company Act. With the advent of war and consequent prosperity of the mills, an opportune time arrived to eliminate the textiles from the system.

On May 4, 1945 letters were sent by NEPSCO officials to 24 persons, inviting bids for the purchase of its holdings of securities of textile companies or for the purchase of their assets.[42] On May 29, NEPSCO enlarged the scope of the invitation to include proposals with respect to other non-utility assets or securities in addition to those of the textile companies. NEPSCO further enlarged the scope of the invitation on June 2 by inviting sealed proposals for the purchase of any or all of the securities or assets owned by it other than those of its electric utility subsidiaries.

The letters asking for bids stipulated "that the proposals would be considered by the companies in relation to the prices named and to any other considerations deemed to affect the value of a given sale to NEPSCO and to the NEPSCO system as a whole, as for example, the prospect of continued operation of the mills." The right was reserved to reject

[38] SEC *Release* No. 6123. October 12, 1945. pp. 4-5.

[39] SEC Proceedings, *supra*. File 59-15. p. 3773.

[40] *Public Utility Holding Company Act of 1935.* Sec. 11 (b) (1)

[41] See, *Engineers Public Service Company v. Securities and Exchange Commission.* U. S. Court of Appeals. District of Columbia. No. 8394. November 22, 1943. Here the Court sustained the Commission in ruling that the Engineers Public Service Company was required to divest itself of ownership and control of a subsidiary street railway and bus transportation business because they were not functionally related to its electric utility business.

[42] SEC *Release* No. 6123. October 12, 1945. p. 5.

any or all proposals and to pursue negotiations further with any offer, with or without notice to others. Before the bids were opened NEPSCO emphasized the importance of continued operation of the mills and requested further assurances to this effect. The bids[43] opened on June 19, 1945, were:

The First Boston Corporation and Coffin & Burr, Inc., Boston, bid $15,839,000 for NEPSCO's interest in NEI, Keyes and Bucksport.

Royal S. Little, Trustee, Providence, bid $15,697,997 for NEPSCO's interest in NEI, Keyes and Bucksport, contingent upon Central Maine Power Company selling two steam generating plants at Bucksport, Maine, for $300,000.

Bear, Stearns & Co., New York, bid $12,800,000 for the securities of the textile companies held by NEI.

Oxford Paper Company, New York, bid $6,700,000 for all the outstanding securities of Maine Seaboard Paper Company and a 5,000 kw steam turbine owned by Central Maine Power Company but located on the Seaboard property.

Oxford Paper Company also bid, as a supplemental bid, $40,000 for all the capital stock of Bucksport held by NEPSCO.

Coffin & Burr, Inc., bid $1,275,000 for the stock holdings of NEPSCO and NEI in Keyes.

Richmond Trading Company, Inc., New York, bid $1,350,000 for the stock holdings of NEI in Androscoggin Mills, the settlement of the debt of Androscoggin Mills to NEI to be mutually agreed upon.

Richmond Trading Company, Inc., also submitted an alternative bid of $1,400,000 for the stock holdings of NEI in Androscoggin Mills, contingent upon funding the debt ($666,791) of Androscoggin Mills to NEI with a six-year five per cent sinking fund debenture.

Jessie J. Holland, Chicago, bid $650,000 for the fixed assets of Androscoggin Mills, plus an amount equal to the net current and miscellaneous assets (exclusive of liability for federal taxes) at the date of closing.

Jessie J. Holland also bid $105 per share ($1,829,520) for the stock holdings of NEI in Androscoggin Mills and $488,127 for the debt owed by Androscoggin Mills to NEI, making a total of $2,317,647.

Townsend, Dabney & Tyson, Boston, bid $225.50 per share ($45,100) for 200 shares of capital stock of Franklin Company (which is engaged in the real estate business in Lewiston, Maine), owned by Androscoggin Mills and Bates Manufacturing Company.

On June 30, 1945, after the date set for receiving bids, NEPSCO received a bid from Textron, Inc., Providence, for the fixed assets of the five textile mills in the amount of $2,000,000 plus an amount equal to the book value of all other assets of the textile mills, excluding cash, accounts receivable and postwar refund bonds.

On July 5, NEPSCO received a bid in the amount of $1,350,000 from Central National Corporation, New York, for the holdings of NEPSCO and NEI in Keyes.

Only two of these were overall bids to purchase NEPSCO's interests in its nonutility subsidiaries. While a higher gross consideration might have been obtained by combining the highest bids for the five textile companies, for Keyes and for Seaboard, NEPSCO took the position that it would obtain a greater net realization by accepting an overall bid because of apparent federal tax advantages.

On July 10, Bear, Stearns & Co. transmitted a bid of $16,500,000 for all of NEPSCO's holdings in NEI, Keyes and Bucksport, "on the same terms as the $15,839,000 bid of Burr-Boston."[44]

NEPSCO's board of directors considered the late bids but accepted that of Burr-Boston on the basis that it gave better assurance of continued operation of the textile mills in Maine.[45] During the adjournment of hearings before the Securities and Exchange Commission Burr-Boston revised its bid upward to $16,500,000, and the Bear-Stearns bid was withdrawn.

The Burr-Boston bid was $16,500,000 for NEPSCO's interests in NEI, Keyes

[43] *Ibid.*, pp. 6-7.

[44] *Ibid.*, p. 7.

[45] *Ibid.*, p. 8.

and Bucksport, and $1,290,600 to the minority stockholders of NEI, on the basis of $40 per unit, or about $17,790,000 for the complete ownership of NEI and Bucksport, and for the system's interests in Keyes. According to the testimony of Albert T. Armitage, President of Coffin & Burr, Inc., the total purchase price was allocated by the SEC staff approximately as follows:[46]

Net current assets of NEI	$ 250,000
Bucksport Water Company	40,000
Keyes Fibre Company	1,300,000
Maine Seaboard Co.	4,160,000
Textile Companies	12,040,000
TOTAL	$17,790,000

The record of testimony indicated and the Commission took notice of the fact that Burr-Boston was "on the inside" on the purchase of the mills.[47] The First National Bank of Boston was NEPSCO's principal banker since 1930, as was its affiliate before that time. The bank held approximately $2,500,000 of Seaboard's notes at the time of the sale. At one time in 1933-34 the bank had lent (including utility loans) approximately $14,000,000 to NEPSCO.[48]

Coffin & Burr, investment bankers in Boston, with offices in Portland and Bangor, Maine, had marketed a considerable amount of securities of Central Maine Power Company in the state and was therefore believed to be interested in the continued operation of the mills and the prosperity of the areas.[49] Burr-Boston participated in many underwritings of the securities of NEPSCO, more so than any other group of underwriters. Not only were the purchasers benefited by their long familiarity with NEPSCO and its subsidiaries, but also they were working on the situation before others were invited to submit bids. They undoubtedly had information which other bidders lacked. NEPSCO officials en route from Philadelphia contacted Burr-Boston representatives in Boston when it was known that the Bear-Stearns final bid was greater and asked if they were willing to increase their bid.[50] The Commission noted that, after the revised Burr-Boston bid, Bear-Stearns was not requested to make a new bid or to give further assurances of continued operation of the textile mills.

The Burr-Boston plan for continued operation of the mills in Maine was outlined in a letter from Herman D. Ruhm, Jr., June 13, 1945. This letter was accepted as the plans of Burr-Boston and was a material factor in the decision of NEPSCO to accept the Burr-Boston bid.[51]

Mr. Ruhm stressed the necessity of a Maine enterprise.

> "Although the Maine mills have a national distribution of their products, they are, in fact, a State of Maine enterprise entirely wrapped up in the future of the state. I believe this ownership or top direction coming from outside the state does not, in my opinion, work for the best interests of the mills. They become entirely too impersonal and take on something of a purely chattel state. I think the organization all the way through prefers and takes pride in 'home' direction. I think the communities are more pleased and more apt to be sympathetic to the mills' problems if they are directed locally instead of from a distance. Furthermore, the heads of the business, living locally, are more apt to understand the communities and conduct the mills as good citizens."

Mr. Ruhm proposed that the board of directors consist of six well-known Maine men, two from Massachusetts, and, in order to represent the point of view of customers, three outlanders. His plans

[46] *Ibid.*, pp. 13-14.
[47] *Ibid.*, pp. 15-16.
[48] SEC Proceedings, *supra.*, pp. 2790-1, 2810.
[49] *Ibid.*, p. 3168.
[50] *Ibid.*, p. 2682.
[51] Herman D. Ruhm, Jr., to W. B. Skelton. June 13, 1945. SEC Exhibit 132.

for the working management of the manufacturing end of the business were definite, as were plans for the sales division, advertising department, and style-and-design department. The objective was to weld the mills together more firmly than ever, rather than to split them apart under various managements.

"Continued operation of these mills in Maine is obviously very vital to their present owners. I believe my group can give you the type of operation that will give you the best assurance obtainable for continued operation. I am willing for you to match our planned directorate, our management, our policies for operation, and our concept of its being a Maine enterprise against the field . . ."

The operation plans of Bear-Stearns were summarized as follows:

"In general, we desire to purchase the securities of these mills for investment, and it will be our intention to continue the operations of the textile properties in substantially the same manner in which they are now conducted. Our offer to purchase was made on our own account, and not as an agent for or in association with any other interests. However, it is quite probable that we may later decide to take one or more partners with us in the purchase, but such partners will doubtless be financial firms who will be governed by the policies which we will determine. We may later decide to make a public offering of securities, but at the present we have no definite idea of the nature or kind of financing which may be developed.

"We think that the development and growth of the mills reflects sound management and the constructive policies which have been followed should be continued. To that end we would request the active executive officers and the agent of each mill to remain in their posts. We may in time want to add to the executive staff but have no specific program in mind at this time. We assume that upon severance of the properties the directorates will be reconstituted. We assure you, and believe that you may rely, that our nominees for the boards will be reputable persons of standing and we shall welcome on the boards representatives of minority interests and of the communities in which the properties are located."[52]

Mr. Skelton felt that the above was a rather broad generality, and that Bear-Stearns should have carefully and constructively made plans for building and continuing a permanent organization.[53] The fact that these bidders intended to take in one or more partners who doubtless would endorse their policy gave no such assurance, and Mr. Skelton's interpretation was that Bear-Stearns had no permanent plans and gave no unqualified assurance of even a present purpose to operate the mills beyond the immediate present.

On the other hand, Mr. Skelton felt that the Burr-Boston proposal was built up around Mr. Ruhm and the existing organizations in the mills, backed and influenced by two investment banking concerns which were long known to have a very definite interest in New England and Maine.

Burr-Boston merged the textile companies and distributed the securities of the resulting company (Bates Manufacturing Company) to the public, reserving certain stock which the mill management had an option to purchase.[54] Coffin & Burr, Inc., took over the securities of Keyes from the syndicate. Thereafter, the assets or securities of Keyes were sold. The securities of Seaboard were resold immediately to a third party, not in any way affiliated either with NEPSCO or with Burr-Boston.

The Securities and Exchange Commission defined the issues in the case as (1) whether the plan is necessary to effectuate the provisions of Section 11 (b) of the Public Utility Holding Company Act, and (2) whether the plan was fair and equitable to the persons affected.[55]

[52] SEC Proceedings, *supra.*, pp. 2704-5.

[53] *Ibid.*, pp. 2904-8, 3161.

[54] SEC *Release* No. 6123. October 12, 1945. p. 8.

[55] *Ibid.*, pp. 12-13.

On the first point the Commission found that the sale of the industrial subsidiaries for cash was necessary to effectuate compliance with Section 11 (b) (2).

"The existence of these companies in the NEPSCO system has been a complicating factor in the NEPSCO situation. The checkered performance of the industrials in periods of depression and of prosperity make them difficult to evaluate. The existence of NEI as an intermediate holding company has tended to restrict the flow of earnings from the operating industrial companies to NEPSCO. The large amount of intra-system debt claims existing between NEPSCO and NEI and between NEI and its subsidiaries has complicated the corporate structure and made it difficult for a security holder of NEPSCO to evaluate his interest. Thus, wholly apart from the question of liquidation, the proposed sale will tend to eliminate unnecessary complexities from the corporate structure of the NEPSCO holding company system."

Likewise the Commission concluded that the price was reasonable and the plan fair and equitable to the persons affected.[56] The price for Bucksport was 8.7 times its net income for 1944; for Seaboard 10.2 times the 1939 to 1941 average earnings; and for the five textile mills 9.8 times the earnings estimate, 15.7 times the average earnings of the mills during the pre-war years 1939-41, and 8.8 times the earnings of the war period, 1942-44.

The Commission referred to the close relationship for many years between NEPSCO and the purchasers, and said that this undoubtedly gave Burr-Boston an advantage in the outcome of the bidding. On the other hand, the sale of NEPSCO's interests in the non-utility enterprises was not subject to the competitive bidding requirements of Rule U-50 nor the provisions of Section 12(d) of the Act.

The Commission felt it was proper for NEPSCO to take into account the effect that the cessation of operation of the textile mills would have on the economic life of the territory served by its largest electric utility subsidiary, Central Maine Power Company, and took notice of the resolutions filed by the City Councils of Lewiston, Auburn, Augusta, Biddeford and Saco, and by Chambers of Commerce, and the appearance of the Attorney General of Maine in the proceedings.

In the words of the Commission:

"We cannot say that the management's determination that the acceptance of the Burr-Boston bid would give greater assurance of continued operations of the mills, was arbitrary or without foundation.

"We give great weight to the fact that representatives of holders of all classes of NEPSCO stock have joined in asking us to approve the plan and that no representatives of security holders now affirmatively oppose it. Moreover, the present acceptance of the bid will place NEPSCO in funds with which to make additional equity investments in Central Maine Power Company and Public Service Company of New Hampshire, thus enabling these two companies to take advantage of present favorable money markets and to refinance on a more advantageous basis. The result of the savings will, under the overall plan of reorganization filed by NEPSCO, redound to the benefit of its security holders."[57]

The Securities and Exchange Commission, contrary to its record a decade ago in the investment and brokerage business,[58] succeeded in developing cooperation among these New England companies. The decision suggests a philosophy of the regulatory commission in encouraging a maximum of local autonomy in the execution of national policy in the region affected.[59] Although

[56] *Ibid.*, p. 15.

[57] *Ibid.*, p. 16.

[58] James T. Young, *The New American Government and Its Work* (New York: 1941), p. 384.

[59] For the insistence of the Federal Power Commission in requiring conformity with state law and interest in local sentiment, see Robert D. Baum, *The Federal Power Commission and State Utility Regulation* (Washington: D. C. 1942), pp. 103-8.

not self-regulation, it may well be labelled "centrally approved regional regulation."

After a hearing Judge John A. Peters in the United States District Court for Maine (southern division) decreed that "the plan is approved as fair and equitable."[60] Previously in 1945 a contract was signed for the sale of Maine Seaboard Paper Company to Time, Inc., publisher of *Time* and *Life* magazines. The next year these securities or assets were sold to the St. Regis Paper Company.[61]

Opposition was registered before the Court. It was claimed that the properties were worth "a good deal more money than offered," and an offer of $1,000,000 more than the Burr-Boston bid was submitted. Judge Peters stated that he was without jurisdiction to accept bids at the hearing, and that he would rule only on the legality of the order.

On petition of Samuel Martin of New York (one of the larger minority stockholders in the Bates mill) for a temporary and permanent injunction to hold up the stock transaction under which the Bates Manufacturing Company became the operating unit for the five Maine textile mills, Justice Harry Manser of the Maine Supreme Court ruled it was an "inappropriate proceeding."[62] Martin's attorney contended that "a cloud of suspicion" had arisen because of the apparent haste with which the transaction was planned but that his client's principal objection was that the sale as arranged would "injure the corporation irreparably and in amounts incalculable at this time." On the basis of the hearing, Judge Manser found that the stockholders had been properly notified of impending business, that authority had been voted the directors to set the price of the stock and that whether or not their judgment was good was not for the Court to pass upon. Petitions were filed to review the SEC order approving the plan and an appeal taken from the order of the United States District Court for Maine approving and enforcing the plan.

Charges were made that the Commission was misled by false statements and by other misconduct in connection with the testimony given at the Commission hearings. These charges related to the conduct of one of the committees participating in the hearings before the Commission in the District Court, to bidding and negotiations for the properties sold to Burr-Boston, and to the price paid for NEPSCO'S interest.

The Commission ordered a hearing on matters pertaining to the sale and plan, starting July 29, 1946, in Boston. The petitions in the United States District Court for Maine were set for hearing at Bangor, Maine, on Sept. 24, but the hearing was not held.

On November 23, 1946, NEPSCO filed an amended plan for corporate simplification by retirement of its prior lien (senior) preferred stock.[63] This plan was further amended on March 10, 1947.[64] The plan called for the retirement of the prior lien shares at the call price plus accrued dividends in cash or, at the option of the prior lien stockholders, in common stock of Public Service Company of New Hampshire (one of NEPSCO's three utility subsidiaries). NEPSCO had realized substantial capital gains from the sale of its industrial assets and was entitled to benefits under Supplement R of the Internal Revenue Code only if such funds were used for certain specified purposes within a two-year period from the date of sale of the industrial assests. One of the major objectives of the plan filed by NEPSCO was utilization of such

[60] Portland *Press Herald*, October 26, 1945.
[61] *Moody's Manual of Investments* (Industrials) New York (1948), pp. 703, 2987.
[62] Portland *Press Herald*, December 22, 1945.
[63] SEC *Release* No. 7056. Dec. 11, 1946.
[64] *Ibid.*, No. 7278. March 12, 1947.

funds in retirement of the prior lien stock by October 30, 1947 in order that NEPSCO would not incur a capital gains tax estimated at $3,200,000. The Commission, in approving the plan filed by NEPSCO on June 27, 1947, sought to minimize the possibilities of delay in its consummation by requiring that payment to prior lien stockholders be limited to $100 per share plus accrued dividends and that an amount corresponding to aggregate call premium, the payment of which was controversial, be placed in escrow.[65]

The Commission has so far not decided the amount, if any, to be paid to the prior lien stockholders in excess of $100 per share plus accrued dividends. This delay may be due to pending action by the Supreme Court in the Engineers Public Service Company case in which similar issues are involved.

The next step in the NEPSCO liquidation probably will be the payment of the bank loan of some $12,000,000 incurred in connection with the retirement of the prior lien stock and an allocation of the remaining assets of NEPSCO between its preferred (junior) stockholders and its common stockholders.

NEPSCO has as of June 1949, an application pending to sell 200,000 shares of common stock of New Hampshire Public Service Company, a subsidiary.[66] The proceeds from such sale are to be applied towards the retirement of the bank loan, but NEPSCO has not shown how it intends to pay off the remainder of the bank loan and to allocate its remaining assets between its preferred and its common stockholders.

Discretion at the Grassroots

The holding company heyday probably was the last era of laissez-faire. In general the holding company did much to achieve unity of management and coordination and integration of industry both vertically and horizontally over a wide geographical area. The superior financial resources trickled down to hard-hit regions, saving some industries and transforming others from going to growing concerns.

But the unregulated excesses and abuses of some top managements caused the system to topple over. Here again, it was mismanagement by business which invited and necessitated additional governmental regulation over a "no man's land." Business racketeered only during the lag until government took up the challenge and acted.

This article suggests a hypothesis that centralization in business and government does not mean necessarily an absolute flight of policy-making and planning from the lowest to the highest strata of hierarchy—that an impersonal and perhaps bureaucratic top management or independent regulatory commission does not of itself transfer local management into puppets controlled at the apex. In New England, at least, grassroots thinking and planning has been dynamic in probing for decentralized authority. Perhaps it was with typical Yankee ingenuity that New England managers succeeded in retaining for themselves a maximum of discretionary authority when they accepted the Insull offers.

Despite the alleged surrender of many power and textile companies to outside interests, the evidence shows that local managers were more than line officers. In Maine, for example, high executives of power companies had promised that the constitutionality of the power embargo law would not be tested in federal court.[67] This law probably constitutes state regulation of interstate commerce

[65] *Ibid.*, No. 7511. June 28, 1947.
[66] *Ibid.*, No. 8551. Oct. 4, 1948.
[67] Gov. Owen Brewster. Speech to Maine members of the New England Council in Portland. Jan. 31. 1925. Ms. in State Library, Augusta, Maine.

in hydro-electric power by keeping a valuable commodity out of the stream of commerce. The Insulls were extremely anxious to sell power in interstate commerce and they could have challenged the validity of the Maine law in court without much expense. They did exert themselves to the extent of spending almost $200,000 in Maine in an attempt to change public opinion for the repeal of the law. But the promise of the Maine executives was kept. The law was not tested in court.

Even with some loss of control Insull money did keep many mills running. When the empire crumbled the local managers were able to salvage much for New England management. The Securities and Exchange Commission promptly insisted upon and obtained a more equitable distribution of voting power among the security holders. Also, action was taken to simplify the complicated structure of the system and to divorce the utilities and textiles in accordance with the law. The Commission used discretion, however, in timing the sale of the industries in the interests of all persons affected. New England directors with perhaps sentimental interest preferred regional ownership and control of their textiles, and the Securities and Exchange Commission recognized and sanctioned local preference within the scope of the law.

The pull of centrifugal force at the top and of centripetal force at the bottom of the Insull structure tended to create a complicated vacuum at the center. The apex fell with the depression, and the Securities and Exchange Commission is still supervising and simplifying the remainder of the hierarchy. As tacticians for Insull, New England management succeeded in being at least quasi-strategists. Before the process of disintegration began New England managers had manipulated themselves into strategic positions. The charge that they emphasized local interests is entirely valid. Nevertheless, their vision, foresight, and regional perspective has had a positive and continuing effect on Yankee industrial and economic prosperity.

A New Simplified Approach to Mathematically Calculated Reserves for Depreciation for Accounting Purposes

By WALLACE B. CARR*

WITHIN the past ten or more years the question of providing adequate protection against capital losses due to depreciation of public utility property has received an increasing amount of attention on the part of both utilities and regulatory commissions. This increasing interest has resulted in an intensified application of mathematics to the subject whereas formerly reliance was placed largely upon judgment of management.

It is recognized that the employment of mathematics in the problem of depreciation immediately meets objection on the part of many, particularly those concerned with management, accounting and legal matters, presumably because it is felt there is a tendency to exclude a proper degree of judgment. Furthermore, the result can hardly be known to be factually correct because the factors on which the calculations are based are not fixed and permanent but rather they involve estimates or predictions as to the future. But in spite of these weaknesses, the problem of providing for the ultimate depreciation of large masses of physical property is far too complicated to ignore the probabilities at least indicated by mathematical analysis. These probabilities, based upon the past, can and of course should be adjusted to reflect the future probabilities indicated by current knowledge of the property and the continued service required of it.

Four phases of the application of mathematics to the problem will be discussed, namely:

(1) The degree of refinement to be rationally employed in the development and selection of survivor data.
(2) Depreciation accounting at original cost is actually accounting for retirement liability.
(3) Stabilization of calculated accrued liability for retirement.
(4) Practical calculations of stabilized accrued liability for retirement: (a) by constituent groups, and (b) by single composite group.

(1) *The Degree of Refinement to be Rationally Employed in the Development and Selection of Survivor Data*

In a matter as variable and indeterminate as depreciation, it appears that certain mathematical processes can be carried to too great refinement, far beyond the accuracy or reliability of the underlying data or the necessities of the case. For instance, four or five separate and distinct families or series of survivor curves or tables, each series covering a broad range of lives, are currently being used to indicate the retirement experience to be anticipated for currently existing property. Three of these series are known as the Iowa Survivor curves developed by the Iowa Engineering Experiment Station (Bulletin 125-Dec. 1935) according to certain mathematical equations producing "typical curves representing, at least for practical purposes, the general run of curves most likely to

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be encountered". The three series, designated as "left modal" (L), "right modal" (R), and "symmetrical" (S) are comprised of 6, 5 and 7 individual types respectively. Another series, developed by the staff of the New York Public Service Commission and designated by the letter "h", is based upon a somewhat simpler mathematical treatment by which the range of type or characteristics can be extended considerably beyond the Iowa curves. Other series, in perhaps somewhat less use, could be mentioned.

Each type of survivor curve is inseparably related to a corresponding dispersion of retirements and the entire range of patterns of such dispersions may be identified by a statistical characteristic called "sigma," namely the standard deviation of a retirement frequency curve of unity life. All possible mathematical values of "sigma" lie between zero and one. Therefore, retirement frequency curves and corresponding survivor curves in the several series developed mathematically may have or reflect the same sigma value.

It appears, therefore, that there may be assumed an effective refinement and degree of accuracy far beyond that warranted by the basic data and the necessities of the case if so many types of survivor curves, of interest perhaps to mathematicians, are recommended from which to make selections as the most applicable in specific cases. In order to measurably compare the results of such procedure there may be invoked the well-established phenomenon of stability in respect of depreciation matters, namely, that a definite survivor curve combined with a constant rate of growth of property (or absence of growth) will ultimately result in a stabilized percentage of mathematically-calculated depreciation. This phenomenon is discussed later herein; it is also indicated by other authors on the subject. While theoretically the values of sigma may be between zero and one, their practical limits are possibly between .2 and .7. Indicative of the comparative results as between various types or families of survivor curves for any single value of "sigma," Table I sets forth the insignificant differences in calculated accrued retirement liability when the value of sigma is .4 and the values of the other variables, life and growth, are constant in each case. Similar differences not exceeding 1% are found for other values of "sigma."

TABLE I—CALCULATED ACCRUED RETIREMENT LIABILITY—"SIGMA"=.4

Annual Growth	Average Life	Type "h" Curve	Type "L" Curve	Type "S" Curve	Type "R" Curve
2%	10 yr.	39.75%	40.0 %	40.0 %	40.0 %
2	30 yr.	37.25	37.5	36.75	36.5
2	50 yr.	33.5	34.0	34.0	33.25
4	10 yr.	38.75	39.0	38.5	38.25
4	30 yr.	32.75	33.0	32.5	32.0
4	50 yr.	27.75	28.25	27.5	26.75

It seems obvious that, when four survivor curves of the same "sigma" value classified by some further arbitrary series or family designation give results varying by a maximum absolute amount not exceeding 1% and in many instances less, the necessity to perpetuate the apparently unimportant distinctions at once disappears. Certainly there is nothing in the whole process of estimating depreciation that indicates the possibility of attaining a result of this degree of accuracy in comparison with the actual facts which to a considerable extent are indeterminate. For those who insist on "fitting" retirement data already experienced to some developed survivor curve, the "h" curves of the New York State Public Service Commission appear to cover the field adequately and are a little easier to handle mathematically. The stabilized results obtained by the

Iowa "L" curves are substantially the same as those of the "h" series. On the other hand, it appears possible to eliminate substantially or entirely this so-called "fitting" process, and proceed solely on the basis of the actual property data now available from properly maintained property records since 1938. Furthermore, the merit or validity of treating the property by arbitrary accounting groups, termed constituent group treatment, regardless of the physical make-up of such groups is open to question. These matters will now be discussed.

(2) *Depreciation Accounting at Original Cost is Actually Accounting for Retirement Liability*

Since the concept of value as an element of depreciation inherent in its derivation and accepted dictionary forms of definition has been effectively eliminated by the rules and regulations of the regulatory commissions subsequent to 1938, and original cost is now stipulated and enforced as the sole basis of accounting and operation, depreciation accounting can be nothing other than accounting for retirement liability, in other words amortization of fixed capital. As a matter of fact so-called depreciation studies and examinations regularly are directed to determining merely the rate of retirement of the original dollar investments at various ages, in other words the actuarial life of the dollars. In view of these facts depreciation accounting, which should reflect a concept of value, is a misnomer and depreciation accruals and reserves are in fact accruals and reserves to indicate retirement liability or in other words to provide for ultimate amortization of fixed capital costs. Under these conditions the more appropriate term would be "retirement liability" which has been used herein.

From this viewpoint one can immediately proceed to the conclusion that dollars themselves constitute a more homogeneous group of units than do the physical property items comprising any of the accounting classifications. Therefore, since homogeneity and the greatest possible number of units are desirable for accurate and reliable statistical analysis, it is logical that the entire investment in a single enterprise in which the dollars are interrelated to the functions and requirements of the whole enterprise should be the basis of determining their life characteristics. This is termed "composite treatment" in distinction from "constituent group treatment." Certainly the life history of such a composite mass will be less influenced by the possible erratic performance taking place in a relatively small constituent group.

(3) *Stabilization of Calculated Accrued Liability for Retirement or Amortization*

Any estimate of accrued liability for retirement, whether by judgment or mathematics, is concerned largely with the future. In fact, certain mathematical methods are concerned entirely with the future. And of course mathematics is applicable to such a problem only when the terms or factors continuously conform to some fixed or regular law. If a calculation of this liability is made as of some particular time from an aged property record, it reflects the assumed strict adherence to these factors of the existing property throughout its entire future life. Furthermore, it has been found that the continuity of these factors for one or more life cycles will, in combination with annual growth, develop a stable ratio of accrued retirement liability in relation to the associated fixed capital. The absence of growth merely increases the number of life cycles required to attain stability. The general equation for this

stabilized ratio of accrued retirement liability takes the following form, which reflects computation according to straight line method and group procedure. This method and procedure are outlined at pages 197 and 198 of the *Report of Committee on Depreciation*, dated 1932, of the National Association of Railroad and Utilities Commissioners and are widely accepted by regulatory commissions. The principle of stabilization is equally applicable to sinking fund and other interest methods of calculation.

$$R = \frac{\frac{1}{L}\left[\frac{(1+g)}{2}\right] - \left[\frac{1}{\Sigma \frac{y_x}{(1+g)^x}} - g\right]}{g} \quad (1)$$

The value of the summation term in the numerator is directly related to the value of the term "sigma" previously mentioned which is given by the expression

$$\text{Sigma} = \frac{\left[\Sigma f_x (x-L)^2\right]^{1/2}}{L} \quad (2)$$

which indicates that this term is comparable to the "radius of gyration" employed in theoretical and applied mechanics.

If the rate of annual growth is zero, a much simpler expression for accrued retirement liability can be developed, namely,

$$R = \frac{1 - \text{sigma}^2}{2} \quad (3)$$

If there is no growth, accrued retirement liability is the same for all types of survivor curves having the same "sigma" value. This supports the contention that minute variations of type must be relatively unimportant even when growth is present.

The symbols employed in the above equations have the following significance:

R = Stabilized Accrued Retirement Liability—according to straight line method—group procedure.

L = Average life of group considered.

g = Annual rate of growth of plant balance in group considered.

y = Mean survivors from a unit radix at all ages.

x = Any age or year between 1 and maximum life of group.

f_x = Retirements from a unit radix during year x.

Σ = Summation of term affected for all values of x.

The second bracketed term in the numerator of Equation (1) is equal to the stabilized ratio of annual retirements in relation to the associated fixed capital. Therefore, the inter-relation of the five terms involved in the equation, namely, accrued retirement liability, average life, average rate of annual growth, stabilized ratio of annual retirements and "sigma" can be shown graphically in figures similar to Fig. 1, in which the three diagrams cover rates of growth of 1%, 3% and 4% respectively and ranges of sigma values, retirement ratios and average life adequate for substantially all situations that will be encountered. The higher "sigma" values are actually related to the "h" family of survivor curves and the remaining sigma values to the "L" family of the Iowa curves. However, as shown in Section 1, equal "sigma" values related to survivor curves in either family are of substantially equal effect upon the calculation of stabilized accrued retirement liability. The accrued liability or reserve values of Fig. 1 are subject to a reduction amounting to the average percentage of salvage realized on the retirements.

It must be admitted that, due to the complexities involved, any calculation of accrued liability for retirement of fixed capital should be subject to some degree of tolerance in relation to the probable actual facts. An absolute or quantitative tolerance of 2% or 3% would be entirely reasonable. In the case of a calculation made from an actual aged property record, sources of error will arise from the fact that the current existing property may not have presently conformed fully to the survivor data built up from the past record and further may not so conform during its remaining life. In the case of a calculation reflecting stabilized conditions, errors may be due to the failure of the property to have attained complete stability and to the lack of conformance with the survivor data. Both methods of calculation would reflect substantially the same degree of error due to changes in the survivor data and the error due to the assumption of stability is insignificant after an age of one or more life cycles.

Figure 1 indicates that a tolerance of plus or minus 2 or 3 percentage points in the amount of accrued liability would cover a very material latitude in average life and rate of growth or a latitude in the value of sigma amounting to around 10%. Such latitudes in the basic factors applicable to the composite property of an enterprise would be absorbed very gradually by changes in the property characteristics so that the indicated accrued liability would similarly change very gradually. It is therefore claimed that instantaneous calculations from an aged composite property record are entirely unnecessary and that results as reliable for all practical purposes may be secured by calculations employing the phenomenon of stability.

(*4*) *Practical Calculations of Stabilized Accrued Liability for Retirement*

Calculations, by various methods, of accrued liability for retirements in a typical electrical utility, which has been in existence for over 50 years, show results enumerated below. For calculations by the constituent group method, survivor data developed by the regulatory commission having jurisdiction were largely used. These data for about 23 constituent groups comprising 60% of the total property were satisfactorily checked by an actuarial analysis of retirements from the property surviving during the past 10 years, from which record the capital claimed as not representing original cost and effects of changes in accounting procedure had been or could be properly eliminated. The retirement record for the remaining 17 constituent groups comprising 40% of the property was entirely inadequate for reliable individual analysis, so that assumptions of supplementary survivor data were necessarily made. Since the data obtained by these or any other method employing constituent group analysis almost never develop complete survivor curves, they have to be extended for very considerable percentages of survivors, in this particular example ranging from 20% to 88% and for many years of life beyond that experienced to date. This again emphasizes the fact that extreme accuracy should not be attributed to calculations based upon this kind of data.

On the other hand, as suggested in Section 2 hereof, if the property of this utility were examined as a composite whole, it would be found that with a smaller amount of estimate and informed judgment a composite survivor curve can be developed extending to 20% survivors at the maximum age of the existing property, thus leaving a relatively less important part of the curve to be constructed by further estimate.

(*a*) *Calculation by Constituent Groups.* Calculations of the accrued liability for

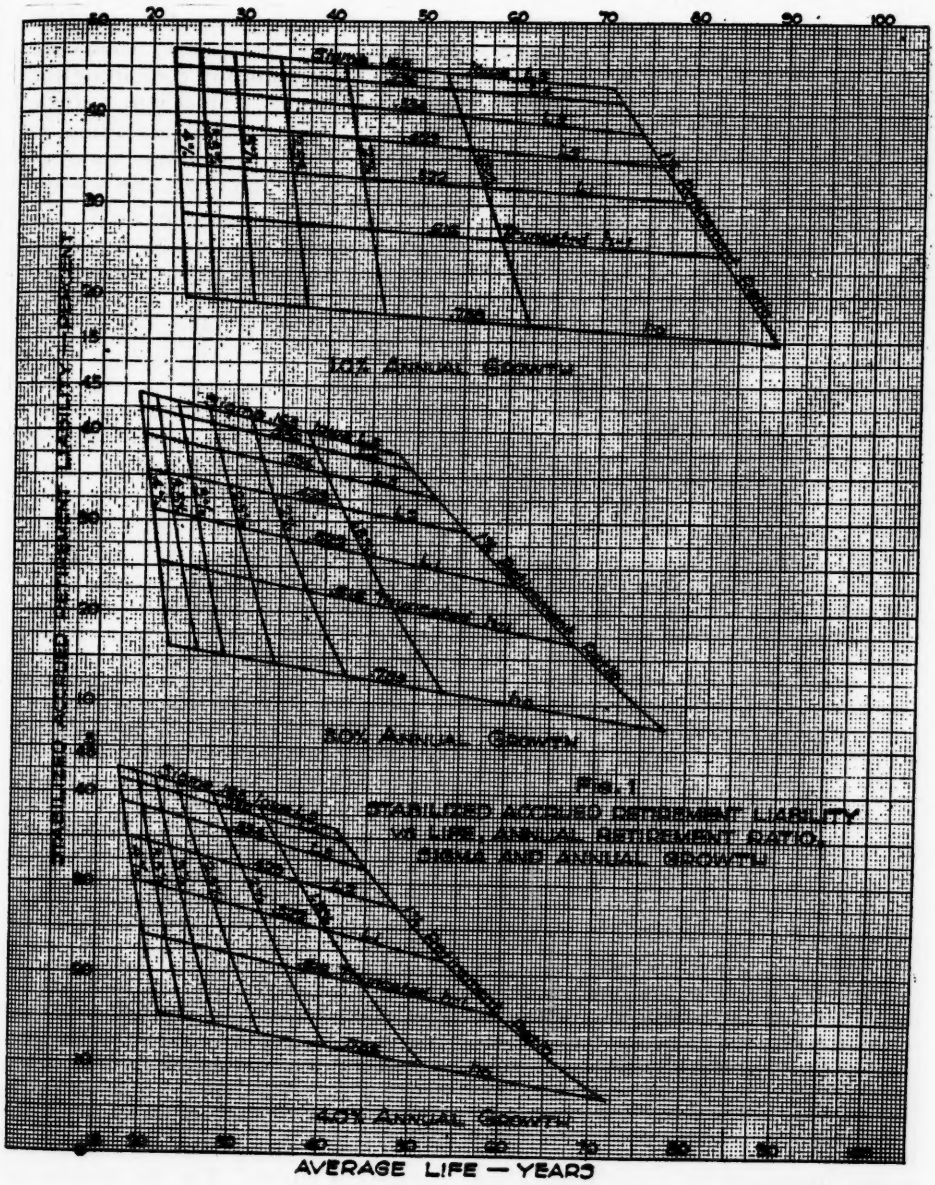

FIG. 1
STABILIZED ACCRUED DEPRECIATION LIABILITY
VS LIFE, ANNUAL RETIREMENT RATIO,
SINGLE AND ANNUAL GROWTH

retirement made individually for the forty groups of current property according to its actual age and the applicable survivor curve, totaled to about 35% (salvage neglected). On the other hand, assuming complete stabilization of the several groups of property, that is, their age distribution conforming exactly to the applicable survivor curves, the total stabilized accrued liability was indicated by Fig. 1 at 30% and 31.5% for annual growths of 4% and 3% respectively. Annual rates of growth of each constituent group were not determined, but rather it was assumed the overall average rate of growth of the entire property would be applicable to any group without serious error. These calculations indicate that the property has become sufficiently aged so that stabilized calculations of accrued liability for retirement may be made in lieu of calculations based upon an actual aged record of the individual items of property in order to establish an objective reserve.

(*b*) *Calculation by Single Composite Group.* The construction of a composite survivor curve follows substantially the same procedure as in the case of a constituent curve. Consideration must be given, however, to the question as to the extent that all the property has contributed to the retirement record up to the maximum age of the recorded retirements. If, as in the present example, it is obvious that certain significant parts of the property are represented in the retirement record only up to some age less than the maximum age of the property, whereas the remaining property is adequately represented in such retirement record, then some adjustment must be made to reflect this lack of data. Normally the adjustment would affect only the lower part of the composite survivor curve and its effect upon calculations of retirement liability would therefore be relatively small.

Because, in the present example, constituent curves were available, it was possible to check the characteristics of the independently constructed composite curve by mathematically combining the constituent "sigma" values into a single composite "sigma" value according to the principles of combining radii of gyration. In addition it was also possible to construct a composite curve by properly combining the annual retirement ratios indicated by the constituent curves.

The "sigma" value associated with the independently constructed survivor curve was .565 and the average life, 40 years. The "sigma" value derived mathematically by either of the above indicated check methods was .555 and the average life 35 years. These differences are either insignificant or of minor effect in determining the amount of accrued retirement liability from Fig. 1. Within the range of growth previously stated and the "sigma" and life characteristics above enumerated, the accrued liability ranges between 23% and 27%.

It is apparent therefore that in this particular case accrued stabilized retirement liability may fairly be stated at 30.5% based upon constituent group calculations and at 25% by composite calculations.

(*c*) *Constituent Group vs. Composite Calculations.* These differences, believed to be inherent in the two methods of calculation and amounting in the example to over 20%, require perhaps some further explanatory comment. The composite survivor curve, developed by the same methods or others comparable to those employed in developing constituent curves, must be equally as valid as the constituent curves. For the purpose of any current calculation both are assumed to regulate the future life of the existing property and for stability calculations it

is assumed, in each case, that the property conforms to the associated curve throughout its entire life. The application of mathematics to these basic data follows the same process in each treatment. Therefore, any major difference in the results must be due entirely to the characteristics of the retirement dispersion curves, as reflected in the value of "sigma." This is fully apparent in Fig. 1. Further proof of this statement may be had by consideration of a hypothetical property of three groups of assumed definite characteristics, for which the results of constituent and composite calculations are indicated as follows:

Group	Percent of Total Property	Sigma	Average Life-Years	Accrued Retirement Liability	
				% of Group	% of Total
1.....	20	.334	25	38	7.6
2.....	50	.429	35	32.5	16.25
3.....	30	.522	60	23	6.90
Total.....	100	....	36.7	....	30.75
Composite	100	.584	36.7	....	24.2

Annual growth of each group and of the composite property—3%.

Starting with three groups of property, the accrued retirement liability of each group is read directly from the appropriate diagram of Fig. 1 using their respective "sigma" and life characteristics. These values are then expressed in terms of the entire property. Similarly the composite retirement liability is read from Fig. 1 using the composite average life and an equivalent composite "sigma" value derived by mathematically combining the individual values. In this example, therefore, any estimating due to incomplete data has been entirely eliminated and the results definitely show lower amounts of accrued retirement liability by composite treatment.

Since the matter of average life is generally accorded considerable importance in depreciation discussions, it might be well to point out that Fig. 1 indicates, for any fixed value of "sigma," a considerable variation in life has relatively minor effect upon the amount of stabilized accrued retirement liability. On the other hand, in the composite treatment of several constituent groups of property, the variation as between the constituent average lives has an important effect upon the determination of the composite "sigma" and the resulting calculated liability. Furthermore, in the absence of growth, average life has no effect upon the results of constituent treatment and "sigma" is the only determining factor as indicated in Equation 3. Also in the absence of growth and of any variation as between constituent average lives, the composite sigma will result in the same total stabilized accrued retirement liability as the sum of the constituent amounts.

Conclusion

From the foregoing it appears first, that composite treatment of the entire property of a single enterprise, such as an electric utility, is a proper and reasonable method of determining mathematically the accrued liability for retirement of property at original cost; second, that multiple families or series of survivor curves do not lend to the result any additional reliable degree of accuracy and therefore their use should not be encouraged, and third, that calculations at stability will normally give results within a reasonable tolerance for any estimate necessarily based upon varying data.

Comparative calculations as set forth herein have been made in only one case. However, the example is typical and from this and hypothetical studies made it is reasonably certain that similar or

even greater differences as between constituent and composite treatment will normally be found. If actual depreciation reserves are to be related to mathematical calculations, which can develop a difference of 20% or greater (normally between 5% and 10% of fixed capital), it seems important that the significance of the application of mathematics to this entire subject should be fully understood.

Reports and Comments

Urban Land Economics: A New Textbook*

THIS textbook is a commendable job. It rounds up a very substantial volume of facts, near-facts, and opinions about urban land. It distinguishes among them. It subjects them to a form of analysis that explains many of them. It presents, fairly and judiciously, the major issues and problems. It is well-organized and capably written. It ought to prove a useful introduction to a complex field that has been largely passed over by academic scholars and teachers although not, in recent years, by business men, government agencies, legislators, trade associations, lobbyists, and civic organizations.

As to approach or conceptual apparatus, Professor Ratcliff tries to explain the facts and relationships of urban land use by adapting some of the main tenets or, if you will, some of the principal theories (or hypotheses) of Marshallian economics. This task is enlightened for some readers and, quite probably, complicated a bit for others by occasional admixtures of Commons' institutionalism.

This is the second book published in this country under this title; the first was Dorau and Hinman's in 1928. (To be sure, various texts and discussions of real estate practice and problems have covered some of the same ground, but their purposes and emphases have been quite different.) Two kinds of questions naturally arise. What advances, if any, in knowledge and understanding of urban land have been made in the 21 years from 1928 to 1949? In light of the public attention and discussion of many urban land problems during this period, why has the subject received so little scientific inquiry and so little academic recognition? These questions deserve much more thorough analysis than is possible in this review. A few suggestions toward their answers may be in order.

Professor Ratcliff's volume is far richer in content than Dorau and Hinman's. He commands a substantially greater range of facts. His classification and analysis of them more often seem to lead somewhere; much less frequently do they seem to be ends in themselves. He looks not only at land use patterns but also, much more than Dorau and Hinman, at the processes of production and finance that partly determine those patterns.

These are not inconsiderable advances. A second look, however, shows clearly that a large proportion of the added realism and insight is in those sub-areas in which government agencies—federal, local, and state—have done the most in recent years, notably housing and its financing. Next in line are retail business uses and location, the particular province of the chain-store analyst. Although university scholars have made minor contributions to these and some other subareas, they can point to no major gain in facts, analysis or hypothesis for which they are primarily responsible. Why? Partly, I believe, because the Marshallian concepts simply don't explain many of the phenomena of urban land use. The neo-classicists of various kinds are even more helpless in this field. Keynes' doctrines, built up from consideration of a body of fact and experience mostly far removed from urban land, have helped very little, if any. The major institutionalists provide insights but by no means a comprehensive, consistent theory of urban land economics.

All this, however, could be said with equal pertinence about other areas in which we see today a lively ferment of interest and inquiry with more than an outside possibility of notable advances in organized knowledge and understanding. Industrial relations is only one example. The difference between the recent history in these two fields seems to be that the limited applicability of general conceptual schemes to urban land has led to (or, at least, has been followed by) neglect of the whole field by university scholars; in industrial

* Richard U. Ratcliff, *Urban Land Economics* (New York: McGraw-Hill Book Co., Inc., 1949), pp. 533. $5.50.

relations it seems to have been a stimulus to new exploration and fresh hypotheses.

If you ask me again, "but why?" I can only say I don't know. My hunches and guesses would take more space here than they are worth. Further, I care less for this particular explanation than for a new recognition of urban land and for a vigorous program of research, teaching, and intelligent experiment in it. Why should not the small band of scholars in this field be given a chance to do what is being done in others? Why should they not take Professor Ratcliff's competent book as an indication of the approximate limits of one approach, at least for the time being? Why should they not recognize that individual activity in the urban land market is more often non-rational than rational, that by-products are more significant in urban land use than in most other sub-areas of economics, that measures of public regulation, direction and action are not only desirable but, in fact, are now major factors in urban land use, development and redevelopment?

If they can take these steps, they quite certainly can break through their present inhibitions on defining research projects and on research method. They can say bluntly that, for urban land at least, political economy or social economy comes closer than most current definitions of economics to indicating the extent and character of their interest. They can search the experience of social psychologists and anthropologists for leads and for methods of getting at human motivation in urban land ownership and use in our culture. They can see whether the methods of the industrial engineer in analyzing plant design and layout can throw any light on or provide better measurements of the congestions and frictions that beset most of our cities. If so, maybe they can contribute to more intelligent and flexible patterns and densities of use for the future. They can get help from sociologists on inquiries into the status and functioning of the various organizations and associations of people that have to do directly with urban land development and control. They can work out ways of measuring changes in urban land use needs in relation to changes in population, and in the volume of business and industrial activity. They can study the relative effectiveness of urban development and redevelopment under the drastically changed definition of property rights in urban land recently instituted in Great Britain.

These are only a few obvious examples—by no means a check-list—of the possibilities that lie ahead in urban land studies if the small group of interested scholars, mostly younger men, is given a chance. At first, I believe they might well heed the words of the late Lawrence Henderson, as quoted by Elton Mayo, in *The Social Problems of an Industrial Civilization*, pp. 17-18:

". . . In the complex business of living, as in medicine, *both* theory and practice are necessary conditions of understanding, and the method of Hippocrates is the only method that has ever succeeded widely and generally. The first element of that method is hard, persistent, intelligent, responsible, unremitting labor in the sick room, not in the library: the complete adaptation of the doctor to his task, an adaptation that is far from being merely intellectual. The second element of that method is accurate observation of things and events, selection, guided by judgment born of familiarity and experience, of the salient and recurrent phenomena, and their classification and methodical exploitation. The third element of that method is the judicious construction of a theory—not a philosophical theory, nor a grand effort of the imagination, nor a quasi-religious dogma, but a modest pedestrian affair . . . a useful walking-stick to help on the way. . . . All this may be summed up in a word: The physician must have, first, intimate, habitual, intuitive familiarity with things; secondly, systematic knowledge of things; and thirdly, an effective way of thinking about things."

Maybe at first this new order will seem confused, disorderly, unsystematic. Quite probably we will hear mutterings about "pragmatic approaches," the need for "conceptual frameworks" and for "more rigorous" definition and thinking. But at least some thinking will be going on—probing, imaginative, exploring thinking rather than the piling up of more and more qualifications in a futile attempt to mitigate the failure of an old "conceptual framework" to provide a genuine explanation of observable facts. And maybe sooner or later a Ricardo or a Darwin or a Keynes will turn up in this growing body of facts and hypotheses to formulate a true theoretical system that fits together most of the pieces into a meaningful whole. Quite

as surely, however, his theory will start a new round of questions, explorations and hypotheses that, in turn, will lead to further contradictions and, in time, to a new theory or set of theories. But that, as President Conant has emphasized, is the essential nature of science—the groping for and eventual formulating of a theory that both explains and leads to further hypotheses and partial explanations.

Does this comment go too far afield? I hope not. For Professor Ratcliff's text seems to me to raise these questions about the past and future of urban land economics as a less competent book could not do. And the future of urban land studies in all their potential fruitfulness depends, in no small measure, on what answers we make.

Meanwhile Professor Ratcliff's book will serve many purposes—as a temperate, fair-minded introduction, a teachable guide, an example of scholarly work in an area notable for its neglect by scholars, and, yes, despite its limitations of theory, "a useful walking stick to help on the way . . ."

COLEMAN WOODBURY

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Severance Taxes on Forest Products and Their Relation to Forestry

IN a chronological sense severance taxes on timber and other forest products are not new. But, from the standpoint of the number of states now levying or considering such taxes and the proposals to increase the rate of taxation, severance taxes must be considered an important new element in the pattern of forest taxation.

Severance taxes, as the term is generally used, are of the nature of occupational or privilege taxes. They are not property taxes and are not subject to constitutional or legislative limitations imposed on the power to tax property. Sometimes they are levied in lieu of property taxes; others are imposed in addition to ad valorem taxes. The Mississippi privilege tax on timber products, imposed in lieu of the ad valorem tax on growing timber, is a non-optional yield tax. Similarly, the Wisconsin "severance tax" applied only to classified forest crop lands is a yield tax. Severance taxes levied in addition to regular property taxes will have a different effect on the practice of forestry than will yield taxes levied in lieu of property taxes. Only the first type will be considered here.

Six states now impose taxes on the privilege of severing timber and other forest products in addition to regular property taxes. Louisiana, whose present severance tax dates back to 1922, was the first to levy this tax. The Arkansas severance tax law was enacted in 1923; the New Mexico law in 1937. Alabama started the recent move to tax the severance of timber with a law in 1945. Oregon followed in 1947 and Virginia in 1948. Bills to impose severance taxes on timber were introduced in the 1949 legislatures of Florida, Montana, Utah, and Washington, but none of these bills were enacted. Rates in Louisiana were increased from two to four times in 1948. New Mexico in 1949 increased rates on a number of products, but left the tax on timber unchanged. Arkansas and Oregon considered bills to increase rates on the severance of timber in these states, but no increases were enacted.

Severance Tax Laws Now in Effect

A brief examination of the timber severance tax laws now in effect may serve as a basis for appraising their possible effect on forest industries and forest practices. There are certain points of similarity in all these laws. They are all privilege taxes imposed in addition to other taxes. The taxes are assessed by the severer or by the manufacturer, who is required to make monthly or quarterly reports accompanied by payment of the tax due. The tax operates as a lien on the severed forest products until paid or, in some states, until the products are sold. The tax is based on the volume of forest products severed or manufactured in all states except New Mexico, where the tax is based on the value of products at the time of severance. Virginia and Alabama assess the tax on poles and piling as a percentage of invoice value.

There are several points of difference among the laws. The principal differences

relate to rates of taxation, exemptions, persons liable, and the allocation and use of revenues collected.

In Louisiana, where the highest tax rates prevail, the tax on saw timber severed varies from 25 cents per M feet log scale on the common hardwoods to 50 cents on pine, 75 cents on ash and hickory, and $1.00 on cypress. The Arkansas tax on the timber severed is 10 cents per M feet log scale. In Alabama the rate is 20 cents per M feet log scale on all logs severed but not converted into lumber within the state, 20 cents on pine, and 8 cents on other species of lumber manufactured within the state. The Oregon tax on logs cut is 5 cents per M feet, log scale. In Virginia the rate is 10 cents per M feet on pine and cedar lumber and logs, and 5 cents on other lumber and logs. New Mexico taxes timber severed at one-eighth of one percent of the value as determined from bids for Forest Service timber. Tax rates on pulpwood vary from 2 to 5 cents per cord in Virginia to 15 cents in Louisiana. Taxes on other products show a similar variation by states.

Oregon exempts from taxation the first 25 thousand feet of timber harvested annually. Louisiana exempts from the severance tax timber grown under a reforestation contract and subject to the six percent yield tax. Alabama, Arkansas, and Virginia exempt individual owners of timber who occasionally cut timber from their premises for their own use in construction or repair of their buildings or for other home use. New Mexico provided for no exemptions until the 1949 revision, which exempts the first $200,000. Alabama and Oregon have yield-tax laws similar to that in Louisiana, but unlike Louisiana they do not exempt from the severance tax timber grown on classified land and subject to the yield tax.

In Louisiana the liability for the tax is on the owner of the timber at the time of severance, though the tax is usually paid by the severer and deducted from his payments to the owner. Because of this liability provision, timber severed from the national forests has not been held subject to the tax. The severer is liable for the tax in Oregon, Arkansas, and New Mexico, though the tax may be collected from purchasers if not paid by the severer. In Alabama and Virginia the severer of logs not manufactured into lumber within the state is liable for the tax, otherwise the manufacturer is liable. In all states except Louisiana the tax appears to be applicable to timber cut from federal lands. This has been established for Arkansas in the case of *Wilson et al v. Cook* (1946), 327 U. S. 474. Two states, Alabama and Virginia, specify that the severance tax shall apply to forest products severed from land owned by either the state or the United States. The Attorney General of New Mexico has ruled (1937) that the severance of timber from government lands by others than the government is subject to taxation, regardless of the ownership of the timber.

The most marked variation among the several laws is in the allocation and use of funds collected. The earliest laws made no provision for the use of revenues for forestry purposes. In Louisiana, one-fifth of the revenues are returned to the parishes where the taxes are collected and the balance goes into a severance tax fund, allocated to the parishes on the basis of the amount of ad valorem property taxes payable to each. Seventy-five percent of the Arkansas revenues go into the general fund and 25 percent go to a county aid fund, allocated to counties in proportion to the severance taxes paid. Revenues in New Mexico went into the general fund until the 1949 revision. The new law provides that all monies collected up to $4,000,000 go into the general fund and that any amount collected over this goes into a permanent severance tax fund.

Timber severance tax laws enacted in more recent years have provided for special forestry funds, into which all revenues are paid after costs of administration have been met. The recent laws also provide that surpluses may accumulate in these special funds with no reversion to the general fund. The Alabama law provides that not less than 85 percent of the tax collected shall be expended for the prevention and suppression of fires on forest lands, with an allocation between farm forests and other forest properties in proportion to the area of each. In Virginia the "Protection and Development of Forest Resources of the State Fund" is credited to the Conservation Commissioner to be used for the purpose of raising, planting, and propagating seedling trees, forest fire protection, forestry education of the public in the use of forest harvesting methods, and rendering forestry service to timber landowners. Revenues from the severance tax in Oregon, after expenses of collection, go to the State Forest Research and

Experiment fund. Forty percent of these funds are for experiments and research in rehabilitation, protection and management, and 60 percent for research in utilization of waste resulting from harvesting, etc., and for other expenses of the state forest products laboratory.

Justification of Severance Taxes

The change from the earlier laws to the more recent ones in provisions for the use of severance tax revenues may well be the reflection of a changing attitude toward the justification of severance taxes. These taxes, imposed on the privilege of severing or harvesting natural resources such as oil, gas, metallic ores, sulphur, salt and shell fish as well as timber, have been justified on the ground that the harvesters were reaping a profit from the exploitation of a free gift of nature. Because of this they could well afford to pay the tax; and the state seemed amply justified in demanding a share of the revenues to be invested in schools, roads or other improvements to take the place of the resources being depleted. But this justification is losing its force. With respect to minerals and oils the cost of discovery tends to destroy the concept of free gift. And as more and more timber is being cut from forests that have been grown, protected and managed to produce sustained crops at considerable cost to the owner, the justification based on the exploitation of a free gift of nature loses all meaning.

Another justification advanced for the severance tax is that it furthers the conservation of natural resources. The theory behind this justification is that a special tax on the severance of natural resources would tend to retard undue consumption and prevent wasteful or extravagant depletion. Conservation of resources may be accepted as a valid justification of a regulatory tax, but the real question is whether a severance tax results in conservation. No restraint on consumption would be realized unless the tax resulted in higher prices to consumers, and this is not to be expected so long as untaxed products from other states enter a national market in competition with products of natural resources subject to the tax. On the production side it has been argued that the products of natural resources whose cost has been increased by the severance tax would not be wasted. There may be some validity to this argument, but it must be realized that natural resources may also be wasted because they are not harvested. A thin vein of ore which is operable economically without the tax may become submarginal with a severance tax, be abandoned, and never be reopened. The experience of Minnesota with the severance tax on iron ore was that high-grade ores continued to be depleted while the production of low-grade cres declined.

The most recent timber severance tax laws have provided for the use of revenues for forestry purposes exclusively. This seems to be a recognition that the tax as a regulatory measure only is not effective in promoting conservation. If severance taxes are to be levied, this more recent justification in terms of revenue needs and expenditures for conservation is a step forward. It provides a positive approach to the problem and a means of measuring results so that advantages and disadvantages can be compared.

The imposition of a severance tax on forest products and the authorization of all revenues over cost of collection to forestry activities cannot, however, be considered a perfect revenue measure. Administrative difficulties arise from the fact that annual revenues are tied to the level of log production and will fluctuate from time to time as this level is high or low. The need for fire protection, planting, research, education and other forestry activities of the state, on the other hand, will not vary in accord with production and revenues. The difficulty in providing adequate and regular forestry services will be greatest if revenues from the timber severance tax are the sole support of the forestry department. It is to be hoped that the administrators of these funds will take advantage of the opportunity provided by law to accumulate surpluses in years of plenty to carry them over the lean years that have always been known to follow.

Incidence of the Tax

Before it is possible to appraise the effect of a timber severance tax on forest management and utilization, it is necessary to consider the incidence of the tax. The severer or the manufacturer of forest products usually pays the tax in the first instance, but the burden of the tax does not necessarily rest on him. He might pass it on to consumers through higher prices, or he might pass it back to the timber owner through a lower price paid for stumpage. The first oppor-

tunity is not a very real one, for the products of the manufacturer enter national markets and must compete with similar products made in other states that do not impose severance taxes. If competition is effective the tax cannot be passed on to consumers.

But shifting the tax to the owner of timber could logically be expected. The value of timber is derived from the value of the products made from it, and any charge increasing the cost of converting timber products tends to lower the price of timber.

Relation to Forest Management

If it is assumed that the severance tax will be shifted in whole or in large part to the timber owner, the effect of the tax on forest management and conservation can be considered. To the timber owner who is managing his forest for future crops to be sold on the stump, a severance tax of 5 or 10 cents per M board feet of timber or logs might not make much difference. On the other hand, while a severance tax of as much as 50 cents on lumber selling at $60.00 per M at the mill might not seem exorbitant, it assumes greater relative importance when shifted to the timber-owner selling stumpage for $10.00. It could reduce the expected return on a near-marginal forestry operation to a point where it would become submarginal and might be abandoned. The general effect of these taxes will be discouraging to forestry as a commercial enterprise.

The owner-operator is the person to whom forestry has the greatest appeal today. The effect of the forest products severance tax on his managment and utilization practices will depend on the nature of his operation, the products harvested, and the net operating return from each. Mature timber of high value that will yield a substantial net operating return will continue to be cut, though the net return under the tax will be reduced. But small second-growth trees that are marginal without the tax will beome submarginal when the tax is imposed. The tendency, assuming fairly accurate knowledge of costs and returns, will be to leave these financially immature trees to acquire additional size, quality and value. In this respect better forest practices will be encouraged.

In many young stands the stocking is so heavy that overcrowding prevents the realization of full potential volume and quality growth. Thinning is necessary to release the remaining trees. But thinnings are costly and, unless a favorable market for pulpwood, fuelwood or other products is available, revenue may not equal costs. The thinning may be made, however, even at an operating loss, in order to increase the value of future growth in the residual stand. A severance tax on the pulpwood or other material produced from thinnings will add to the difficulty of carrying on this important practice.

In many stands of merchantable timber there are less favored species mixed with the more valuable ones, as white fir in the Douglas-fir stands, and fir and larch in the white and ponderosa pine stands of the Inland Empire. In depressed markets and sometimes in normal markets the revenue from these associated species will not cover the costs of harvesting. Under these conditions the more valuable species are taken out and the submarginal ones are left to reproduce a forest of lower value. The full utilization of the minor species in such a stand would permit a reduced cut of the higher-value species, conserve the supply of the favored species, and provide for a better stand composition in the next crop. A severance tax would not discourage the harvesting of the plus-value timber, but it would discourage the cutting of otherwise marginal timber of the minor species.

Under the favorable markets of the past few years salvage logging has been conducted in many areas, particularly in the Douglas-fir region. Salvage logging means the return to a logged area to recover material of current value that was left in the first logging operation. Lighter equipment used in the salvage operation helps to reduce costs, but many of these operations are at or near the margin. A severance tax heavy enough to be significant might mean the abandonment of this practice, and wood that could be recovered may be left to rot while vigorous, growing trees are harvested to supply our needs for lumber and pulp.

The total net effect of forest products severance taxes on forestry is difficult to measure at the present time. Favoring forestry are the use of revenues by the states for forestry purposes and the tendency to discourage the premature cutting of second growth that could, if left to grow, add quality and value. Discouraging to forestry, as are all charges that increase costs, are the reduction in net return to a commercial enterprise

and the added obstacles to fuller utilization of thinnings, minor species and salvage material.

It may be that with more experience and a better understanding of the effect of the tax on forestry practices, legislatures will enact severance tax measures better adapted to the efficient functioning of state forestry departments and to the needs of the forest industry, many members of which are now making a serious attempt to introduce good forestry and utilization practices. House Bill No. 59 introduced this year in the legislature of the state of Washington had several features that were an improvement in this respect. In addition to authorizing the use of revenues for forestry purposes and providing for the creation of surpluses without any reversion to general funds, this bill provided that "any funds spent for the protection of forests from fire shall be in addition to and not in substitution of the funds presently expended for this purpose . . ." The bill also provided that "when the State Forester shall make a finding in writing that such privilege tax discourages or prevents salvage logging operations or operations that are primarily for the purpose of providing fire protection or rehabilitating or reforesting devastated areas, he may exempt timber or forest products cut in connection with such operations from the tax . . ."

Summary

Recent developments indicate that the severance tax on forest products is finding acceptance as a revenue measure[1] rather than as a regulatory tax to promote conservation. Questions may be raised regarding the equitable distribution of the tax burden so long as revenues go into general funds. These questions are less pertinent when revenues are allocated and expended for forestry purposes, though the ability of commercial forest land owners to support the entire cost of state forestry activities in normal times may be questioned, as may the concept that they should bear this burden alone.

Administratively the forest products severance tax is deficient when it alone is relied on for revenues for forestry activities. A forest conservation program cannot be conducted at maximum efficiency under an uncertain and fluctuating budget. The greatest progress in fire protection, planting, improved harvesting methods, research and education, and other forestry activities will be achieved under regular appropriations supplemented, if necessary, by revenues from the severance tax. Surpluses from the severance tax should be permitted to accumulate with no reversion to the general fund of the state.

Finally, the effect of the severance tax on forest practices on privately owned lands should be recognized, and exemption from the tax should be granted in cases where its imposition would work against salvage logging and cultural practices essential to good management and utilization. Otherwise the benefits realized through state forestry activities may be nullified by the discouraging effect of the tax on good forest practices.

RALPH W. MARQUIS

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[1] Indicative of the revenues received are the collections in Alabama of $390,585 for the fiscal year ending September 30, 1947.

Book Reviews

Freedom from Want: A Survey of the Possibilities of Meeting the World's Food Needs. A Symposium, edited by E. E. DeTurk. Chronica Botanica, Vol. 11, no. 4. Summer 1948. $2.00.

This is a collection of papers presented to the American Association for the Advancement of Science at its Boston meeting in December 1946. They make a useful addition to the growing but chaotic literature on a subject that is often dealt with in alarmist terms. But the reviewer wishes that the editor had gone beyond his bare duty and had made an orderly summary of the heterogeneous material in the papers, improving the arrangement and proportions, ignoring the irrelevant and erroneous, and filling a few gaps at least with pertinent questions. Even the meaning of the dangerous slogan, "Freedom from Want," is discussed only in the next to last paper (Black's).

FAO Director-General Dodd, in his foreword, interprets the concensus too optimistically in contrast with the gloomy views of his predecessor, Sir John Orr. H. R. Tolley, also of the FAO, goes further when he says that science has given a basis for *confidence* that the goal of "enough food of the right kinds for all the people" is *within reach*. The papers themselves do not bear out this statement. In the main, they deal with *potentialities* of increasing food production, *possibilities* of restraining population increase, and grounds for *hope* that a better balance is attainable. The net conclusion is that the nations of the world can, if they will, make progress in feeding their peoples better.

Tolley briefly summarizes the nutritional status of peoples before World War II and in 1946-1947, the FAO estimates of world "minimum dietary needs" in 1960, broad facts about world food production, and the evidence on population growth as it was available in 1946. He sees "the heart of the problem . . . in increasing production faster than population growth." He touches on various possible ways of achieving this, among them "to open up resources other than those of farming for the bulk of the population." This point deserves more elaboration and emphasis, as compared with increasing food production, than the papers provide.

Robert M. Salter of USDA's Agricultural Administration argues that, properly utilized, world resources of soils and fertilizers are adequate to permit expansion of world food production by 1960, ample then to meet the FAO forecast of requirements for adequate diets for all. His detailed estimates of practical possibilities, through additions to cultivated lands as well as higher yields, deserve study. He raises but does not attempt to answer the critical question: "Can we mobilize these resources to produce the needed food?" He does not ask how the products can be distributed so that all will have good diets, nor does he look specifically beyond 1960.

Two authors from the Bureau of Plant Industry deal almost solely with the United States. K. S. Quisenberry summarizes American experience in increasing yields of corn, wheat, oats, rice, potatoes, forage crops, alfalfa, and red clover, and briefly adverts to crop improvement in a few other countries. M. A. McCall warns that our increased crop yields are accelerating soil depletion. He stresses the lag between acquisition of knowledge and its application on farms, emphasizes the need for cooperation between scientists and economists, and discusses the newer types of extension (e.g., the TVA test-demonstration farms) and the need for other types even in this country.

F. B. Morrison of Cornell discusses the relative efficiency of animals as feed-food converters, almost exclusively on the basis of American conditions, but says very little on the main topic.

J. D. Black of Harvard contributes the most pointed and penetrating paper, though it is ill-organized and marred by digressions and several questionable statements. Among other things he well brings out that full freedom from want is neither attainable nor desirable: that even to insure "that no one need have poor health or lack strength and

endurance because of not enough foods of the right kinds" is a highly ambitious objective; that progress in this direction in many countries "could be buried in a population avalanche," and that the hope (he says "true picture of population balance") is that one country after another will work itself "into a state in which the arts advance faster than the population, output per worker increases, and the country definitely begins to move toward its population optimum."

JOSEPH S. DAVIS

Food Research Institute,
Stanford University

From the Ground Up. By Paul M. Tyler. New York: McGraw Hill, 1948. pp. 248. $3.50.

This is a deft, persuasive, and somewhat narrow version of the ethos of the mining industry. The author, in his final paragraph states that the book:
". . . aims simply to present the case of our own domestic mining industries before the bar of justice and common sense. The other side—the case of professional internationalists—has been presented so often and so persuasively that many persons have come to believe that our prime national duty is to strengthen the industries of other nations." (p. 235).

The author begins with a reference to the dependence of the domestic standard of living and national security upon minerals and mineral fuels, and pays generous tribute to the contribution of mining to the economy of the West. Four solid and interesting chapters on the recent history of the production of minerals and non-metallic raw materials are lightened by a large number of well-chosen photographs of mining operations.

The major emphasis of the book is on the need for conservative mine taxation, adequate and strictly supervised military stockpiles, sound money adequately backed by gold and silver, laws to encourage prospecting for blind lodes, percentage depletion allowances continued at war-time rates, and tariffs high enough to equalize costs of foreign and domestic ore at the point of importation. He urges that, to conserve mineral resources, we keep domestic mines in operation rather than close them in favor of imported foreign ore. "Paradoxical though it may seem, the record shows that persistent mining, instead of merely exhausting our reserves, actually assists in maintaining and increasing them. The reason, of course, is that it makes possible the continued search for new ore bodies and extensions of old ones, and channelizes the ingenuity and energy of research workers toward utilizing low-grade or sub-standard ores." (p. 202) "Warning signs that have thus far appeared forebode nothing more serious than gradually rising costs. Changes in wage rates and taxes have been vastly more significant." (p. 203.) He is of the opinion that "when the need for ore becomes evident, mass attack on the business of ore finding . . . should bring results just as spectacular as those achieved by the great oil companies." (p. 206.)

Mr. Taylor seems occasionally to recognize that each mineral presents its own problem, but he concludes with the conventional preference for higher tariffs over "artificial" subsidies, quotas, "sundry schemes for spoon-feeding private enterprise" or other forms of regimentation of industry." (p. 232.)

The book will please many people. Yet no serious student will read it without genuine regret that an author with such impressive academic conditions (Rutgers University and M. I. T.), so adept at expressing the scope and drama of mining, should dismiss the most vital national problems with such broad commuter-train stereotypes. The mining industry needs an exact knowledge of the nature of the issues. Mr. Taylor's lance-tilting at the "professional internationalists" will not conceal even from the engineer a certain predilection for looking at issues through the wrong end of the telescope.

To take a practical case, would not American ingenuity be more usefully expressed in dealing with Turkey for metallurgical chrome than in searching the native hills of the United States? Or, to consider another old question, at what rate, if any, should we substitute the copper of Keweenaw County, Michigan, for the product of Anaconda's Chuquiquamata in Chile? The exploitation of every resource presents its own peculiar limits, including the exploitation of that ubiquitous mineral, oil.

WARREN ROBERTS

Wabash College

The South in Action. A Sectional Crusade Against Freight Rate Discrimination. By Robert A. Lively. Chapel Hill: University of North Carolina Press, 1949. pp. viii, 98.

The subject matter of this brief monograph is the political history of the movement to secure freight-rate equalization between the South and the North, which culminated in the so-called Class Rate decision of the Interstate Commerce Commission on May 15, 1945. The economic issues and technical rate-making aspects of the interterritorial rate problem are considered only incidentally. The author challenges the view that this problem was in its origin and nature purely one of technical transportation economics and rate-making, and also that it either could or would have been decided by the Commission on this basis alone. Speaking of economists and professional traffic men he says, "Their somewhat naive persistence in isolating the South's recent gains through rate reform from the political levers by which the gain was achieved, is the author's reason for attempting this study." (p. vii).

The author describes the movement for freight-rate equalization as "a compound of genuine economic grievances and shrewd maneuvers," (p. 18) but his subsequent discussion suggests that he regards the latter element as more important than the former. With regard to the origin of the movement he makes the significant observation that "when the South was spotlighted in the late 1930's as a national economic problem, it found the freight rate controversy a tailored defense for more deep-rooted sectional ills," (p. 18)—a point that could have been profitably elaborated. The monograph reviews the history of the movement and analyzes in some detail the so-called Southern Governors' Case of 1939, the division of interests in the South with respect to the equalization of class rates and the Class Rate Case itself. The Southern Governors' Conference is given principal credit for steering the movement to a conclusion favorable to the South. On the other hand, with reference to the attack on railway rate bureaus by the State of Georgia the author comments that "Governor Arnall's unwise assumption of headlined personal responsibility for the Georgia suit, and his casual dismissal of the long crusade waged by the other southern governors" (p. 88) resulted in this program receiving less support than it deserved.

The author implies that the outcome of the Class Rate decision is to be attributed to political pressure on the Interstate Commerce Commission and to the fact that its members were strongly influenced by their sectional backgrounds. Thus, he points out that seven of the nine commissioners who voted in the Southern Governors' Case and five of the majority of seven in the Class Rate Case voted in accordance with the interests of their home territories. These are not new charges. Few would deny that they contain a measure of truth, but it may be questioned whether they hold to the degree implied by the author, either generally or in the litigation here in question. The author goes further and points out that in 1933, just prior to the beginning of the movement for rate equalization, of the forty-one men who had served on the Commission twenty-four had come from the East, twelve from the West and only five from the South. While he does not explicitly say so, he strongly implies that a deliberate policy of equalizing regional representation in the membership of the Commission should be adopted in order to assure protection of regional interests. This also is not a new suggestion, but the reviewer agrees with Professor Sharfman and others that such a step would be highly undesirable. It would undermine the Commission's impartiality and independence and is inconsistent with the conception of the Commission as a body with a national outlook, adjusting rate relationships in terms of the broadest national interest. In general, and apart from the foregoing, however, the reviewer finds the monograph to be a useful and well-documented study of a neglected phase of the interterritorial freight rate controversy.

ROBERT W. HARBESON

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As You Sow. By Walter Goldschmidt. New York: Harcourt, Brace and Company. 1947. pp. xvi, 288. $4.00.

As You Sow is concerned with the urbanization of rural people resulting from industrial-

ized farming. Mr. and Mrs. Goldschmidt lived in and analyzed the sociological characteristics of three rural communities in California. The implications of their findings question the folklore concerning farm people and farming as a "way of life." It is this stereotype of farm people which Professor Goldschmidt holds responsible for mistakes in legislation concerning parity prices and farm labor. The results of his case study lead to suggestions for changes in public policy toward industrialized agriculture.

The part of the book devoted to case histories of Wasco, Dinuba and Arvin is excellently and carefully done. While the more general sections are equally carefully written, dissension is more likely to occur.

Industrialized farming is defined by Mr. Goldschmidt on page 217. It is not synonymous with large-scale farming.

Characteristics of urban culture are given as: heterogeneity of origin and occupation, use of pecuniary calculus to determine social worth, creation of "a system of social controls in which money is the key to power," (pp. 224-5) and combination of common-interest groups to combat the power of monied groups in obtaining a greater share of the product. Many of these urban patterns are found in the communities studied.

One of the unique characteristics of Wasco compared with other American rural communities, according to Dr. Goldschmidt, is that the society is divided into "two fundamental groups who though they are mutually dependent are in direct economic competition." (p. 78) The cleavage between these two groups is basic to the analysis in the last chapter, "Social Direction." Mr. Goldschmidt remarks that present "farm-labor policy is predicated on the same fallacy that parity payments are; that rural society is homogeneous and unified, where cupidity is unknown, and tranquility the keynote." (p. 253) He suggests three basic principles for farm policy. Equity as the "underlying principle of farm policy means that all public policy must be designed to support the working farmer against the aggressive economic policies of growing rural industrialists, and the rights of labor against oppressive actions of small groups seeking personal aggrandizements." (p. 256) Professor Goldschmidt proposes a guaranteed minimum wage and unemployment insurance. T. W. Schultz's "Two Conditions Necessary for Economic Progress in Agriculture"[1] is a better analysis of the nature of the economic problem involved.

VIOLA WYCKOFF

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[1] T. W. Schultz, "Two Conditions Necessary for Economic Progress in Agriculture," *Canadian Journal of Economic and Political Science*, August 1944.

Family Housing. By Deane G. Carter and Keith H. Hinchcliff. New York: John Wiley and Sons, Inc., 1949. pp. viii, 265. $4.00.

This book presents a complete treatment of house planning, construction, and financing in simple, nontechnical language. Though designed as "a textbook for college students and as a reference for home economists, teachers, and others having a personal and professional interest in housing the family," this reviewer considers it rather as a conventional guide for prospective middle-class home builders.

There are seventeen chapters, two appendixes, 157 well-chosen photographs and drawings, and an index in the book. The authors, being engineers, discuss these topics most satisfactorily: general planning, remodeling, safety, equipment, basic measurements, structure, materials, costs, and financing. One of the best chapters is devoted to farm housing, the authors' specialty. It compares farm and nonfarm houses, stressing the distinctive needs of the farm dwelling.

In planning and constructing a house, the functional approach is used. Family activities such as eating, sleeping, visiting, and playing are considered in space-cost allocations. Adequate attention is given to storage and working space. Differences in personal and family needs are recognized.

The book has serious limitations as a text on housing. It contains a meager description of general housing conditions in the United States, but problems of housing the masses of families who cannot afford new or remodeled dwellings are ignored or neglected. Technological and organizational practices of the construction industry which tend to make good housing expensive are not discussed. The need for and development of federal housing programs barely receive mention.

References to source materials omit publications of Ford, Abrams, Dean, Straus and others who deal with social, and especially, controversial, aspects of housing. The discerning reader gets the impression that status quo in housing is a matter to go unchallenged. After all, the job of the engineer is to build a good house for the family who can pay for it, and from this viewpoint, Carter and Hinchcliff have written an excellent book.

ROBERT T. MCMILLAN
Oklahoma A. and M. College

Investment, Location and Size of Plant. By P. Sargant Florence (assisted by W. Baldamus). Cambridge: University Press; New York: The Macmillan Company, 1948. pp. 199. $3.75.

Professor Florence's study analyzes the structure of different industries in Britain and America in reference to "their comparative intensity of investment; their pattern of location; and the prevailing size, if any, of their factories or plants." The approach is largely "statistical" and the chief sources of data were the British Census of Production for 1930 and 1935 and the American Census of Manufactures for 1929, 1939, and occasionally for earlier dates. Numerous ingenious techniques are necessary and were employed to develop the analysis as, for example, in the definitions of industries or in the formulation of the criteria for measuring the size of plants, intensity of investment and "localization."

Professor Florence points out that widely dispersed, smaller plant industries result from scattered supplies and markets and heavy transport costs for materials and products. Larger plants, he finds, are located in the more densely populated regions such as London, and in the industrial districts. Also, the tendency of highly localized industries to have middle-sized plants is accounted for on the basis of economies similar to those possessed by the large plant, namely, close "juxtaposition" of many auxiliary activities. Florence also observes and accounts for the fact that in assembly and other industries, "the greater the investment per worker, the larger the size of plant prevailing in any industry," despite the tendency of mechanization to reduce the labor requirements. Non-statistical factors, such as risk, scope of transactions and historical patterns are likewise noted and briefly commented upon, but could not be fitted into the statistical analysis.

Certain policy issues are also examined, such as desirable size of plant, programs of industrial relocation and the role of efficiency versus other criteria in plant size and location. Increased size of plant is predicted on the basis of past trends of intensified investment and cheapening transport costs. A considerable field for small-sized plants is still expected for certain industries with high transport costs and dispersed markets. Difficulties, however, are anticipated in implementing dispersion or decentralization programs in England, particularly if the policies are not applied to appropriate industries.

The conclusions in this study are often tentative because of the dearth of statistics and because only a few of the interdependent variables could be considered. For those who may disagree with Professor Florence's views, several appendices are provided containing much of the data and an analysis of some of the procedures and reasoning employed. Some independent use may therefore be made of the statistics.

Increasing interest in industrial location and size of plant has been stimulated by problems such as depressed areas, fear of unemployment, plans for "decentralizing" existing cities and building new towns. Professor Florence's study contributes to clearer thinking about these problems despite what appears to this reviewer as an excessive adulation of "facts" and some awkward organization and writing. This volume will, or should, dispel many of the easy generalizations about ruralization of industry. It also bares the many difficulties and variables involved in arriving at sound decisions for policy formation and provides useful data and methods of analysis as well as fruitful suggestions for research.

LLOYD RODWIN
Massachusetts Institute of Technology

The Social Areas of Los Angeles. Analysis and Typology. By Eshref Shevky and Marilyn Williams. Berkeley and Los Angeles: University of California Press, 1949. illus., pp. 172. $4.00.

This is the first volume of a study; it develops a method of analysis of population

data and a typology of urban forms. The second volume, to be published subsequently, will deal with the uses of this typology and with "the social meaning of a variety of urban differentials." Possibly this subsequent volume may answer some of the questions which the volume at hand has raised in this reviewer's mind.

While the study uses the census tract as the unit of analysis, it is not primarily interested in the spatial distribution of social phenomena but in the structure of urban society. Los Angeles which, as the authors remark, has been least studied sociologically of all American metropolitan centers, in part because it is regarded as "atypical," may be of particular interest just because of its atypical traits which are largely extreme manifestations of trends which may be observed in all urban areas.

The study starts with an introduction which ably summarizes the world-wide process of urbanization, covering generally familiar ground, supplemented, however, by less-known data concerning migrations to California. Against this broad background a number of variables are defined and measured in part one; while part two attempts to use the results of this analysis in order to *identify social areas as types*. For this purpose the authors use in a very ingenious way the technique of "attribute space;" finally, the 9 types of social areas developed by this method are correlated with 4 types of age profiles and with the sex ratio.

It is evident that the validity of the results is dependent on the adequacy of the variables which are selected as tools of analysis. The authors select three variables to construct an "index of urbanization" and three others for an "index of social rank;" to these is added an "index of segregation" of ethnic groups. "Urbanization" is defined "not in a purely quantitative sense of numbers of people living in cities," but by presumably urban characteristics: low fertility, high percentage of women in the labor force, and low percentage of detached single-family houses. While there is no doubt that all these are characteristic of urban versus rural populations, it may be questioned whether there is any meaning in calling one urban group more "urban" than another except insofar as such differences can be shown to be dependent on the time the group has lived in the city—again a quantitative factor. In the absence of such a proof the selection of qualitative variables as indices of urbanization would appear to be circular reasoning. It is general knowledge that all three selected variables frequently vary with the successive stages in the life cycle of a family; yet it can hardly be claimed that such a family is more "urban" in one stage of the cycle than in another. Therefore the differences measured by these variables, while significant, are not necessarily indices of "urbanization."

The variables selected for the "index of social rank" are educational level, rent per capita, and occupational status. The use of rent *per capita*, rather than *per dwelling unit*, introduces a bias in favor of small households which generally contain an abnormally high percentage of working women. "Occupational status" is measured by the percentage of laborers, operatives, foremen, etc. in the labor force. This tends to give a high rating to groups with high representation of service and clerical occupations, i. e., of female workers, and raises some doubt whether the high correlation between "social rank" and "percentage of women in the labor force" presented in the study may not be the result of biased indices of "social rank."

While it is to be regretted that the authors do not present more adequate justification for the selection of these particular variables, it is not unlikely that more careful tests would confirm the validity of their general conclusions. They found a positive correlation between occupational level, age, years of schooling, and rent, and a negative correlation of these with the sex ratio.

Regardless of the significance of these conclusions, the study remains a very valuable attempt to develop new methods for the exploration of the still largely unknown field of the structure of urban society. Its value is greatly enhanced by the numerous excellent charts and maps. It contains six detailed appendices, an index, and a bibliography.

HANS BLUMENFELD

Philadelphia City Planning Commission

City, Region and Regionalism. By Robert E. Dickinson. New York: Oxford University Press, 1947. pp. 319. $4.75.

Although the author modestly denies that his book is about planning but, rather re-

gards it as a study of the "geographical structure of society," or of human ecology, there are few planners who would not acknowledge the usefulness of this compilation of regional planning data. In it the author purports to examine "the natural fabric of community-interests upon which the delimitation of new local government and major federal units of intermediate government must be based."

The author is at his best in discussion of the economic relationships of regional and metropolitan areas. Data from American and European (French, English, German) sources are invaluable since they are presented with the same comparative viewpoint. Of particular interest to the student of world affairs, and a result of the author's familiarity with his subject, is the analysis and cogent recommendation for control of German productivity, apart from territorial separation and annexation. In addition, Mr. Dickinson discusses the homogeneity and integration of American city regions, including Chicago, Baltimore, Salt Lake City and Walworth County, Wisconsin.

With the prefatory explanation that the author has "used English spelling in all quotations from American sources," a reader might be led to believe that the references are scrupulously correct in all minutiae. However, it would be difficult to obviate all error in any such compendium—this is apparent in the interpretation of some materials, at least those from familiar sources. For example, without full understanding of all the forces at work in the American scene, it is altogether too easy to say that people *segregate themselves* into homogeneous and tightly demarcated ghetto groupings.

The neighborhood is discussed as both a rural and urban and a social and physical structure. As usual, it appears to be accepted as a facile formula, without particular question as to its adequacy as a physical concept, its social import and the sociological impossibility of recreating it in the complex urban structure of our cities. Indeed, the author discusses American sociologists' viewpoint of neighborhood as being comparable to that of the County of London Plan with its "neighborhoods" of 6,000-10,000 persons on 50-100 acres. Yet later he presents the rural neighborhood of sociologists Brunner, Kolb and Sanderson as being constituted of a dozen or so homes, related by kinship, interdependence and other factors.

Possibly a more intimate knowledge of American cities or accurate interpretation would have shown that there is little evidence if any, that "practical city and regional planning" is a usual practice of most regional planning associations or city plan commissions and that actually few official regional or metropolitan plans are known to exist. However, city and regional plan organizations, official or ad hoc, which divide their mutual area of concern by agreement on fallacious or arbitrary municipal jurisdictional lines, might well be warned by Mr. Dickinson of the need for realizing that there is "an effective natural geographical unit whose borders are very wide and vague, but whose city centres are the meeting-place of more and more of these relations [service functions]. If a political frontier cuts through such a grouping it is a potential source of danger to the efficient functioning and organization of the whole and of its parts."

The author gives little attention to forms of city growth other than Burgess' concentric zone theory; no mention is made of the multiple nuclei theory and only passing attention is given the sector theory. Although this scholarly book contains more than two hundred references to various sources, no recognition is made of the important work done in this field by such students of urban sociology as Louis Wirth, Svend Riemer and T. Lynn Smith.

Since the book was published in 1947, the study of Middleborough, under the title of "The Social Background of a Plan," was prepared by Ruth Glass, and "X-Ray the City" was written by Dr. Ernest Fooks; it is of interest that these later publications pinpoint specific problems raised by Mr. Dickinson.

Despite its seemingly complex organization, and the criticism which might be leveled at certain detail, the source material cannot help but be of value to the student of regional planning. Through the assembly of these materials, some of which are original translations by the author, an excellent framework is provided for the study of society and effective regionalization of local governmental administration.

REGINALD R. ISAACS

Michael Reese Hospital Planning Staff

New York: The World's Capital City. By Cleveland Rodgers and Rebecca B. Rankin. New York: Harper & Bros., 1948, pp. 371. $5.00.

New York: The World's Capital City is such a mouthful that you start the book convinced the authors have over-reached themselves; that they have reared back and committed a puff-sheet. Well, you're wrong!

Take some of the illustrations. The city pictured seems pilfered from Super-Man. But it's not. The over-riding highways entwined amongst the skyscrapers and the under-lying tunnels burrowing every which-way are facts not fancy. The pictures are photographs, not weird drawings by an imaginative cartoonist. You can't laugh them off. They are real.

In fact, you can't laugh off any of the book. And you don't want to. For this book is not so much a history of New York as it is a history of man, of people and pelf, of pleasure and poverty, of us and the world.

Your first feeling of pique with the authors for dragging in the World Capital as an attention-getter changes to thanks for their sense. They convince that for all nations to have chosen New York as United Nations headquarters, as the World's chief city, is an international accolade too little acclaimed by New York's fellow Americans; that New York's businesslike tempo determined the choice; that the United Nations wants to get on with its job in a businesslike way in a businesslike city.

You find all this out, and more too, in a painless way. The book is written that well, not unlike a Britannica with the touch of David Cushman Coyle. It is mass production with the light touch. There are slums, slums, slums; housing, housing, housing; skyscrapers, skyscrapers, skyscrapers; evil, evil, evil; good, good, good.

You'll quarrel with an index which only lists Riis Park on page 257, and then you find the facts you really sought about this great crusader, Jacob Riis, are on pages 251, 285, 291, 294 all unlisted.

And you won't like the mass grouping of illustrations. At least I didn't. They should adjoin their subject matter. Otherwise the bookmanship will satisfy you.

By and large, *New York: The World's Capital City* brings into focus the past and the present of world-wide economics, sociology and political science. It is must reading and it is easy reading.

CHARLES F. PALMER

Atlanta, Georgia

Electric Power and Government Policy. By the Research Staff, The Power Committee. New York: The Twentieth Century Fund, 1948. pp. 788.

In the latter part of 1938 the Trustees of the Twentieth Century Fund appointed a special survey committee, with the purpose of making an intensive inquiry of the electric power industry and the varied relationships existing in that industry between consumer, investor, employe, and the Government—the latter both as operator of a segment of the electric power industry and as regulator of the rest. Chairman of the committee was J. Henry Scattergood, Director of the Philadelphia Transportation Company and other companies, and a former member of the Public Service Commission of Pennsylvania. A staff was set up, and most of the work done in 1940, 1941, and 1942. Finally completed in 1943, the volume could not be published, chiefly because of paper limitations. In its place, a 261-page brief version was released in December 1943 under the title, *The Power Industry and the Public Interest*, in order to bring to the public the conclusions of the Power Committee.

As indicated above, most of the factual data used in the study is now almost 10 years old. Since these facts were compiled the electric power industry, with the rest of the world, has gone through a long and costly war, and now many of its problems of a decade ago have entirely changed significance. In addition, a new set of problems has arisen, and customer, investor, employe and public views as well as sentiments have changed. In general, therefore, the significance of this study now would appear to be chiefly historical.

The study treats first with data showing the rapidly growing importance of electric power in the nation's life, and with the methods of charging for electricity. This is followed with

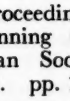
a long summarization of the studies dealing with regulation of the industry, including regulation of the financial organization and the market areas of private electric systems. Discussion on these latter points relates chiefly to the important Federal activities in these fields, as a result of federal legislation during the 1930's, such as the Holding Company Act and the SEC Act.

The study then progresses through an investigation of the alternatives for regulation, starting with municipal ownership, through state- and federal-owned systems, concluding with a discussion of the subject of a National Electric Power System. One of the best sections of the study, in the opinion of the writer, is the section on the TVA and other public power projects.

The final chapter is the report and recommendations of the Power Committee, which is the same as that set out in *The Power Industry and the Public Interest* referred to above.

W. J. CROWLEY

Northwestern University



Planning 1948. Proceedings of the Annual National Planning Conference. Chicago: American Society of Planning Officials, 1948. pp. 198.

The Proceedings of the 1948 annual National Conference of ASPO give ample evidence of careful program planning, resulting in a program which was broad and comprehensive in several dimensions.

Politically it ranged from the neighborhood to inter-American planning with valuable emphasis upon regional and state levels. It was international:—speakers from Great Britain and four Latin-American countries. Geographically it dealt with such non-political or supra-governmental entities as intrastate metropolitan areas and major and minor watersheds. In the realm of economics it was concerned with the integration of problems of agriculture, flood control and decentralized industry as well as metropolitan industrial sites and suburban shopping centers. In terms of sociology and personnel, there was extended discussion of the education of professional planners and the general citizenry, and of public participation in planning. Chronologically there was pertinent reference to history as well as to the implications of the atomic age. Space limitations permit more detailed reference to only two facets of the multiple inter-related problems, which are of particular interest to this reviewer:—allusions to history, and education of the planner.

Acknowledgment that planning in its modern sense has a history, and reference to it for guidance and as a springboard for prophecy, connotes maturity in what one speaker called "one of the world's youngest learned professions."

It is the function of a prophet, especially when he is a convention keynoter, to lift his confreres out of their pre-occupation with present technicalities by re-stating fundamentals, and sometimes by recalling some great prophets of the past and their accomplishments, as Lewis Mumford does in his tributes to Olmsted and Howard:

"Contrasting what has been done (during the past 25 or 30 years), with the more superficial 'City Beautiful' movement . . . I am afraid I would have to say that . . . Frederic Law Olmsted . . . was closer to the human side of planning than we have been during the last generation."

A valuable and more extended historical reference was made, appropriately, and not unexpectedly, by the only British speaker on the program, Gordon Stephenson. He noted that, as in many other fields, the intellectual groundwork for modern planning was laid a century ago by an assortment of pioneers including not only "philosophical radicals" but also men of various social classes, political affiliations and economic conditions.

The growing pains and adolescent confusion of the new and rapidly growing profession are manifest perhaps most noticeably in the Session on *Training the Planner*. It is perhaps unfortunate that the title, the creed and educational touchstone of the profession is a word which means ten things to ten different people, in as many occupations, each of which might make some claim to the title "Planner." The confusion is due to the failure to differentiate, with distinctive terminology, between the fact-finding, analytical, diagnostic, creative, executive, political and technological functions involved in the total procedure under discussion.

Carl Feiss essays a *reductio ad absurdum* by means of a humorous allegory in which he says some things which undoubtedly need to be said about "mistaking statistics for plans," about being both "prophet and engineer."

He lists at least 18 different professional skills or fields in which the planner must be educated, if not trained, with references to "superman and the messianic complex." This view is supported by Blumenfeld's insistance "that physical and socio-economic planning are two different disciplines," and Stephenson's admonition, "We have to resist the temptation to go on surveying until we no longer have creative minds and spirits."

Jack Kent demonstrates that if the job is to be done it had best be attempted at a large university with tradition, contacts and experience in public service located in a progressive state with full range of strong academic departments and realistic field problems to be drawn upon. He affirms the "belief that the student can comprehend the broad general ideas that form the bases of economics, political science, sociology and the arts and sciences of design," by orienting "toward generalization rather than specialization," in addition to learning "the techniques and principles of city and regional planning."

John Parker notes approvingly the "extent to which architect-minded planners had opened the doors to the many other departments . . . concerned." He urges "collaborative research and the inter-departmental seminars which require concentration on problems rather than disciplines." He rightly emphasizes the importance of potential public education through collaboration with teacher-training institutions.

This conference, this book and this review will not settle the question as to whether urban and regional planning is to be best done by a man trained as a super jack-of-all trades or by a team of specialists out of which in each locality the naturally-endowed leader emerges. The controversy should be regarded as a sign not of divisive weakness but of healthful growth.

As may be expected from this particular group of planners, the planning officials, the book reflects a healthful tone of realism. One is led to believe that these men are capable of facing and working in terms of today's facts of life, political, social and economic, while holding to long-range ideals. Stephenson said "we have to act with the people."

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American Transportation in Prosperity and Depression. By Thor Hultgren. New York: National Bureau of Economic Research, Inc., 1949. pp. 386. $5.00.

This volume deals with cyclical expansion and contraction and the long-term trend in American transportation industries. It is one of a series of installments dealing with cycles and their causes to which the pioneer studies of Wesley Mitchell in the field of business cycles gave the original impetus.

Primary consideration in this volume is given to railroads, but water transport, transit —the local transportation of passengers— highway transport, pipe lines and aviation, in descending order respectively, are given subordinate consideration.

The years 1920 and 1929 are significant in this study because in these years passenger traffic and freight traffic, respectively, reached their peaks and thereafter turned downward. Over the more than forty years studied up to the turning-point years of 1920 and 1929, respectively, each period of "boom" reflected a higher level of traffic than the preceding "boom "period, and each period of "depression" reflected likewise a higher level than the preceding "depression" period. Thereafter, the long decline began, and the situation was reversed in all years except those affected by World War II. That is to say, the traffic levels in each period of general economic decline were lower than those of the immediately preceding period.

The influence of business cycles is reflected in almost every phase of railroad operations— the volume of traffic, traffic composition, length of haul, load of cars and locomotives, active time of cars and locomotives, speed of trains, length of trains, size of labor force, composition of labor force, length of work week, fuel consumed, material prices, and rates received—to mention some of the more important items.

The author concentrates on the behavior of traffic costs and profits. Unit costs move inversely to cycles in railroad traffic. Unit profits are higher at the end than at the beginning of a period of economic expansion, and they are lower at the end than at the beginning of periods of contraction.

The author has found the movement of railroad rates to be sluggish, and that general

changes in railroad rates since 1890 have, almost without exception, been made in inverse conformity to traffic.

In discussing future cycles, the author recognizes that the procession of expansion and contraction will probably continue, and it is apparent that future cycles will reflect much the same behavior of costs.

The transportation industry, in 1930, provided about 14% of all jobs. The commercial movement alone required between 7% and 10% of the gainfully employed.

This volume may properly be regarded as a "must" on the reading list of investment or loan officers of banks, for operating and maintenance employees in the industry, for economists, and for regulatory authorities.

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American Housing: Problems and Prospects. By Miles L. Colean and the Housing Committee. New York: Twentieth Century Fund, 1947 (first published 1944). pp. 466. $3.00.

Five and a half years have proved the worth of this comprehensive description of the American housing industry. As an economic rather than a broadly sociological, political, administrative, engineering, or architectural treatise, it is the authoritative work in the field. Housing as viewed in this study is divided into its production and marketing aspects. These are described by the staff which worked on the study. Then a program for housing is proposed by the housing committee organized for the purpose by the Twentieth Century Fund.

A fundamental characteristic of the industry is ferreted out early in the book and reemphasized as the chapters turn from land to the house as an industrial product, and then to the management of the house-building industry and the marketing and financing of houses: "The industry is geared to the variable and often eccentric demands of the top third of the population." Analysis becomes sharply critical in the Committee's conclusions in which the traditional policies of the industry are described as leading to "(a) an exaggerated violence in the house-building curve with serious repercussions throughout the business world; (b) a rapid obsolescence of dwellings at the top of the scale and an undesirable maintenance of values in the worst of the supply at the bottom; (c) unnecessarily high costs in the production, distribution and financing of dwellings; and (d) unnecessary expense, inconvenience, and even suffering for a large part of the population."

The recommendations of the Committee are calm, balanced, and comprehensive. Indeed, the book is a symbol of what is beginning to be called "the good old comprehensive days" of housing when from about 1941 to 1945 recognition of housing as a proper focus of government organization was a new advance and the new National Housing Agency was busy tucking under its wings the brood of sixteen federal agencies hatched during the depression and early war administrations. This was before the deluge of housing demand which came late in 1945 and early 1946 with 12,000,000 returned from the war. It was before the successive periods of inflation and disappointment, of amiable frenzy in Washington and of extremely large-scale, albeit unimaginative, construction. The problem in 1943 was not interest rates rising against the secular trend, nor prices that had doubled. Yet an eminent committee consisting of Henry Hoagland, Lillian Gilbreth, Frank P. Graham, Arthur C. Holden, John C. Lapp, William I. Meyers, and Coleman Woodbury generally agreed on a comprehensive set of recommendations which appear solid and substantial today as yesterday, and clearly founded in the facts produced by the study. The recommendations are notably calm and deliberate on such questions as public housing, which is accepted as an obvious part of a comprehensive building program (along with public responsibilities for urban development and housing finance).

The factual findings are even more calmly stated, and presented in an assured and competent manner. Extensive appendices and 300 pages in the main body of the text bristle with data, many of which, before publication of *American Housing*, were difficult if not impossible to obtain. There is an impressive amount of previously unpublished material of great value. Despite the passage of five and a half years these data remain pertinent.

As in the recommendations, emphasis is upon price and cost. This emphasis, however, is upon the especially high cost and

price of housing compared with other goods, rather than upon the cyclical rise in prices generally. From present perspective, this appears as the weak point in the book. Subjective factors which lie behind cyclical declines in net investment and national income are not given an important place in the analysis. Yet in understanding the reason for the peculiarities of the housing industry, may we not have to explain some of them in terms of adaptation to a climate of fear, or adaptations which preserve for many elements of the industry a flexible production plan permitting each to "cut and run" when economic skies darken. With the exception of these subjective factors, however, the book states in excellent order many of the "stubborn facts" with which interpretations and explanations of the behavior of the housing industry must contend, and it suggests a number of spots where more digging is desirable if the source of the trouble is to be located.

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